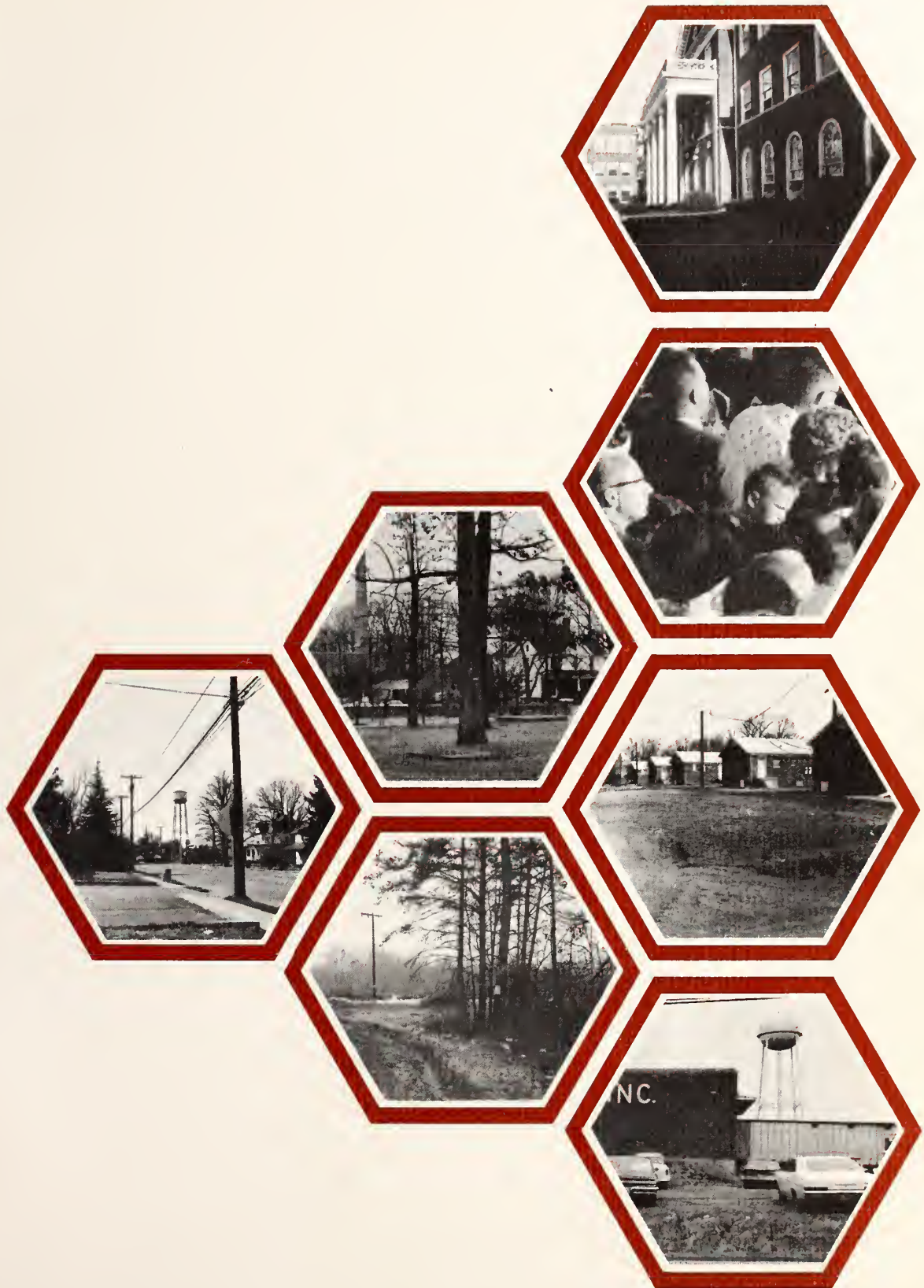


# ELON COLLEGE, NORTH CAROLINA



## POPULATION AND ECONOMY STUDY LAND USE SURVEY AND ANALYSIS

## SUMMARY

TITLE:           Elon College (N. C.) Population and Economy Study  
                  and Land Use Survey and Analysis

AUTHOR:           Division of Community Planning (T. Foxx), North  
                  Carolina Department of Conservation and Development

DATE:            April, 1968

LOCAL PLAN-  
NING AGENCY:    Elon College Planning Board

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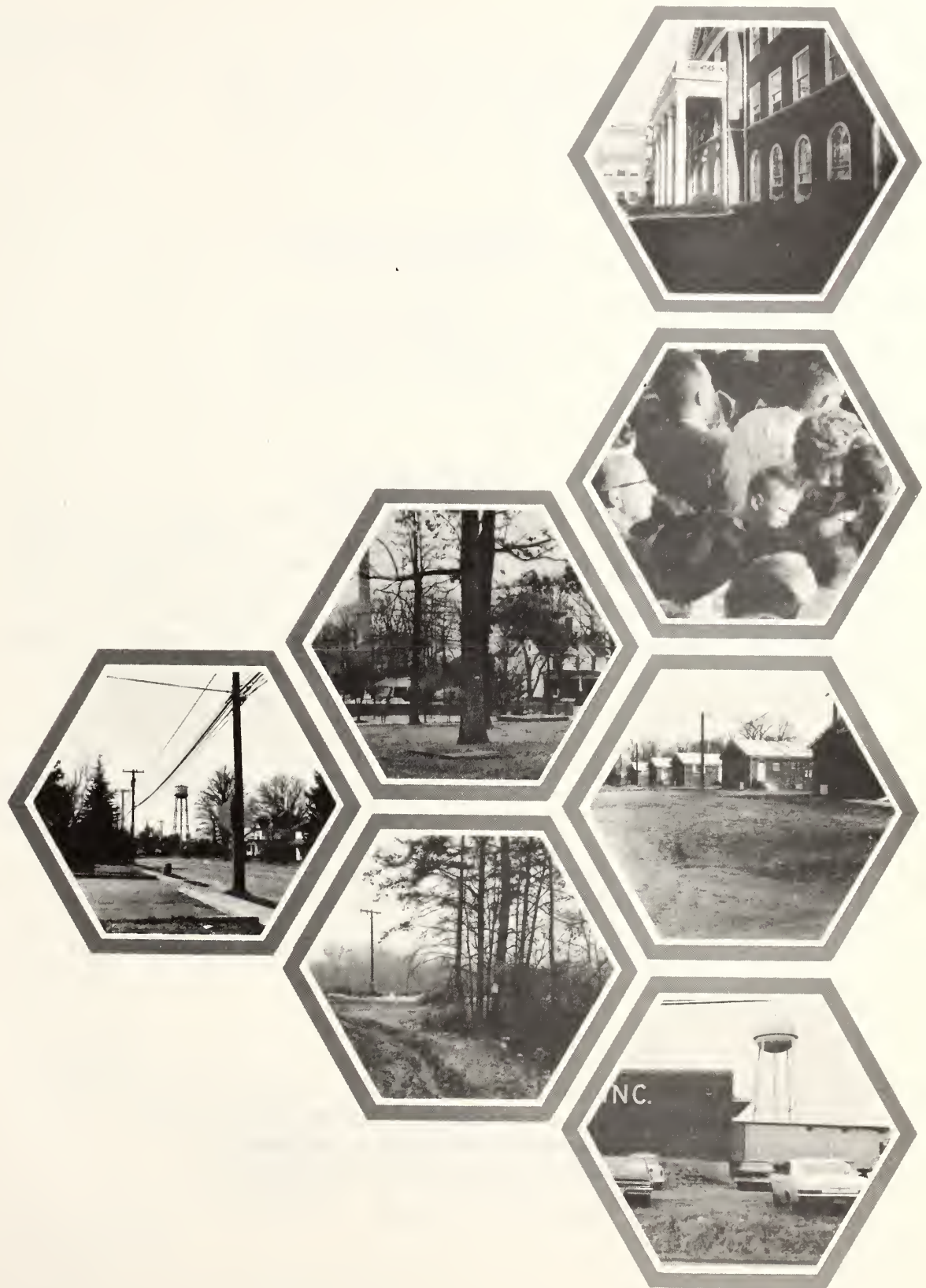
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ABSTRACT:       Analyzes population trends. Projects future  
                  population. Study of local and regional economy  
                  with regard to assets and liabilities. Surveys  
                  existing land use pattern and intensity of develop-  
                  ment. Outlines major physical characteristics  
                  and significant problems that can curtail develop-  
                  ment. Future land use patterns are suggested.  
                  Study is a basis for the future preparation of a  
                  Land Development Plan and Community Facilities  
                  Plan.

# ELON COLLEGE, NORTH CAROLINA



## POPULATION AND ECONOMY STUDY LAND USE SURVEY AND ANALYSIS



The preparation of this report was financed in part through an urban planning grant from the Department of Housing and Urban Development, under the provision of Section 701 of the Housing Act of 1954, as amended.

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# Introduction





## INTRODUCTION

This report, the Population and Economy Study, along with the Land Use Survey and Analysis, are basic planning tools in the planning process which culminates in a land development plan. Included in this report is information on the major physical characteristics of the land within the Elon College Planning Area. The Elon College Planning Board will use this information along with the information contained in the Population and Economy Study to develop general plans and policies for comprehensively guiding future land development in the Elon College area.

### Regional Setting

Elon College lies in the very populous and prosperous Piedmont Crescent of North Carolina, an industrialized region that stretches from Charlotte to Raleigh and includes Kannapolis, population 37,000; Thomasville and High Point, population 81,000; Winston-Salem, population 140,000; Greensboro, population 136,000; Burlington, population 36,000; Durham, population 81,000; and Raleigh, population 105,000.

More specifically, Elon College adjoins the City of Burlington's western corporate limits and is approximately 20 miles east of Greensboro. The impact of this region with its complementary industrial characteristics has been a vital factor in the development of Elon College and the area. It is expected that such impact will be of tremendous significance during the next 20 years. Already the area that composes the Piedmont Crescent ranks fifteenth in total population for urban areas in the United States.<sup>1</sup> The importance that this urban area will have on Elon College is suggested by the fact that the area has a high degree of specialized manufacturing which needs

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<sup>1</sup> Community Planning News, N. C. Department of Conservation and Development, Division of Community Planning (Special Issue).





to be more diversified. As this diversification comes, Elon College is apt to gain some of this diversified industry and other complementary urban land uses will of necessity become a part of the region. Elon College, since it is sandwiched in this region, can profit from the growth that the region will engender. It is important, however, that the region plan wisely for this growth, that inter-city and inter-county bickering be avoided, that the concept of unity with separate identity be paramount. It has been pointed out that the Piedmont Crescent should study and plan with three basic considerations (1) an evaluation of the strengths and weaknesses of the region's economy, (2) an analysis of human resources in the region and their needs in a changing society, and (3) a careful appraisal of the living environment - the community facilities, transportation and other requisites of urban life. Such planning must often start on a local level. Active planning programs are underway in all of the larger cities of this region. Randleman, Mebane, Davidson-Cornelius, and Elon College are examples of smaller towns who are interested in planning. Through the planning in these separate political entities, the groundwork for a regional planning program can be begun. The planning program of Elon College and the Piedmont Crescent mutually affect one another.

In addition to this study, Elon College will undertake additional elements so that in the future the community will be attractive and well planned. Hopefully, by this advance planning, Elon College's plans can be programmed into the Piedmont Crescent Development Plan. To accomplish this, Elon College must work closely with the other political entities as they develop long range plans.

#### The Planning Area

A town's planning area ordinarily extends one mile from the corporate limits but in the case of Elon College portions of two other incorporated areas fall within that one mile area; consequently, Elon College has no jurisdiction over these areas.







ELON COLLEGE, N. C.

REGIONAL SETTING

PIEDMONT CRESCENT

25-MILE RADIUS





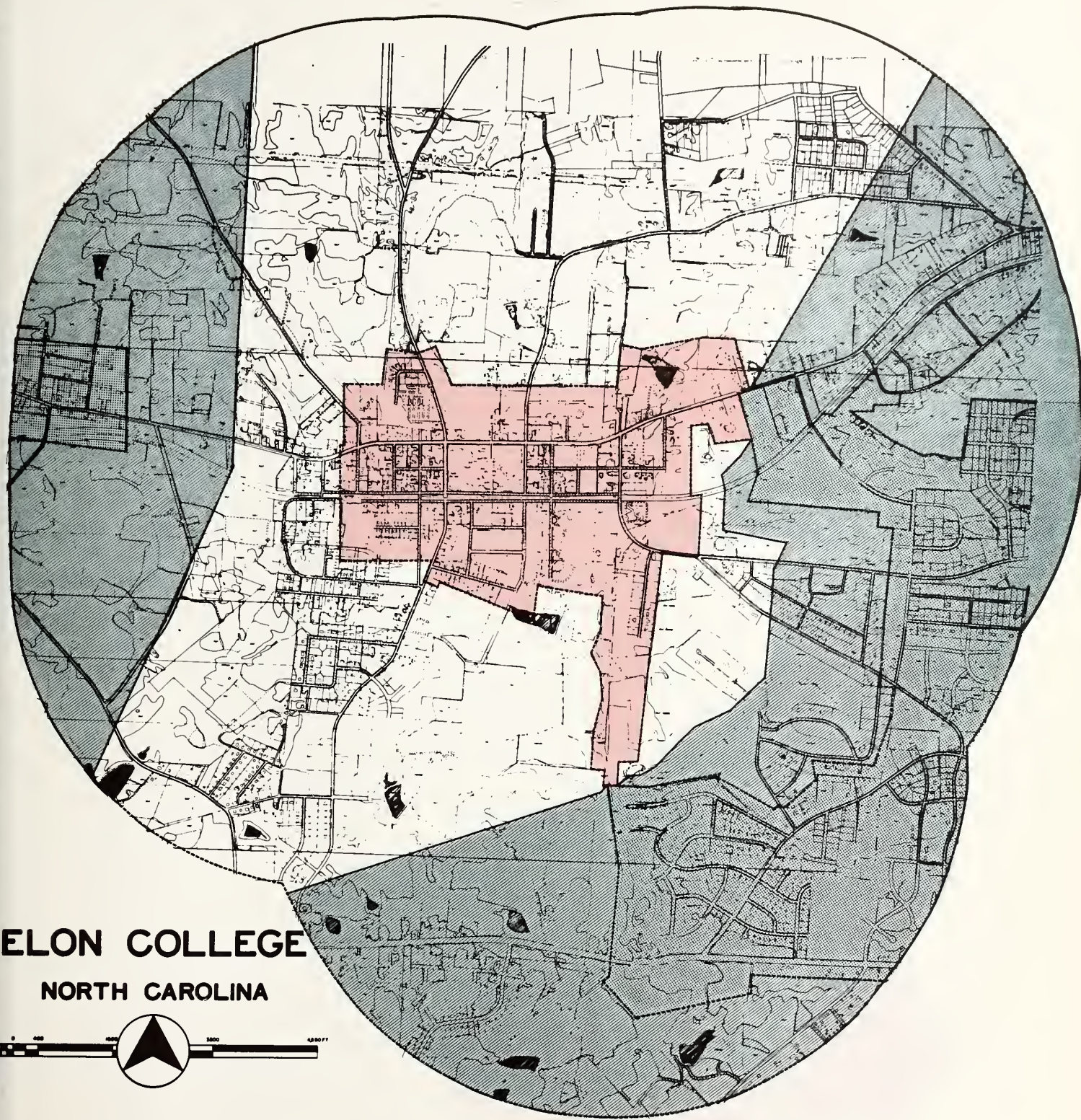
Furthermore, the City of Burlington, which is one of the two incorporated areas in the one mile planning area, touches the corporate limits of Elon College on the east at two points.

When the one mile areas of two or more towns overlap, N. C. G. S. 160-181.2 provides that "the /zoning/ jurisdiction of each such municipality shall terminate at a boundary line equidistant from the respective corporate limits of such municipalities, unless such municipalities shall agree in writing upon a different boundary line based upon geographical features and existing or projected patterns of development within the area".

If the three towns in the Elon College region divided their respective zoning areas equidistant, the Elon College Zoning Area would be as indicated on the following map.

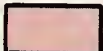

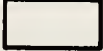






**ELON COLLEGE**  
**NORTH CAROLINA**

PLANNING AREA

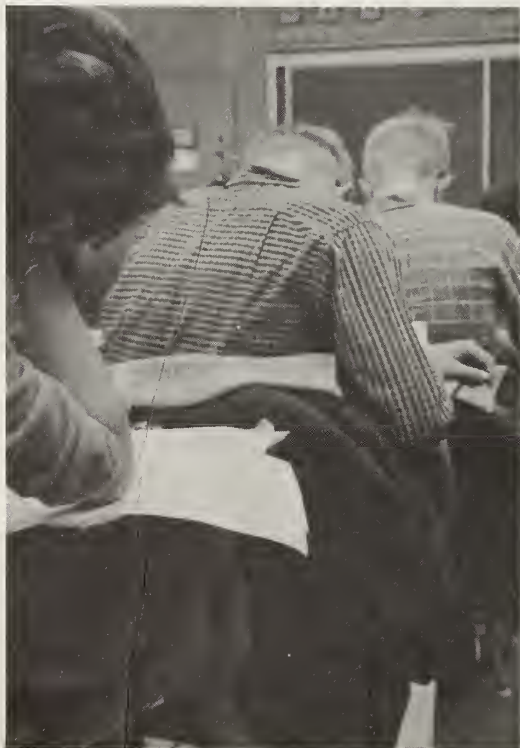
-  Town of Elon College
-  Zoning Jurisdiction of Burlington and Gibsonville
-  Elon College Extraterritorial Zoning Jurisdiction





# Population







## POPULATION

One of the basic steps in the development of a Comprehensive Plan for any area is a study of the area's population and economy. A Comprehensive Plan, among other objectives, strives to determine the adequacy of community services in relation to present and future population. It is important that realistic projections based upon past trends and anticipated future trends are used in the framework of the Comprehensive Plan in order to prevent costly overexpansion or underexpansion of community facilities such as fire and police protection and water and sewer services.

Before the future population can be forecast, information on past population trends, characteristics of the population, and levels of education and income need to be studied.

Basic to the population and economy of Elon College is that of the county in which it lies. A study of the population of Alamance County precedes the study of Elon College.

### Alamance County Population

When Alamance County was formed from Orange County in 1849 there were 11,000 people living in the county. During the 1850's and 1860's the county population was stymied by the Civil War and Reconstruction. Since 1870 the population has steadily increased to an estimated population of over 95,000 in 1965. See Table I for Population Growth and Projections through 1980.

The population projections for 1970 and 1980 are gained from natural increase and net migration. Natural increase is the difference between births and deaths for a set interval of time. Net migration is the difference between people moving out of an area and people moving into the area.



TABLE I  
POPULATION GROWTH AND PROJECTIONS, ALAMANCE COUNTY<sup>1</sup>

<u>Year</u>	<u>Numerical Population</u>	<u>No. Change</u>	<u>Percent Change</u>
1850	11,444		--
1860	11,852	408	+3.56
1870	11,874	22	+.185
1880	14,613	2,739	+23.06
1890	18,271	3,658	+25.03
1900	25,665	7,394	+40.46
1910	28,712	3,047	+11.87
1920	32,718	4,006	+12.24
1930	42,140	9,422	+32.35
1940	57,427	15,287	+46.27
1950	71,220	13,993	+24.36
1960	85,674	14,454	+20.29
1970 (projected)	100,295	7,311	+16.39
1980 (projected)	118,484	18,189	+18.13

<sup>1</sup> U. S. Census of Population and Hamilton and Perry, 1980 Population Projections for North Carolina Counties, Division of Community Planning.

### History and Population Growth of Elon College

The Town of Elon College began as Mill Point, a railway shipping point for nearby textile mills. In 1890, the four year college of the Congressional Christians was opened after having moved from Graham where it was called Graham Institute. The attendance at the school in 1890 was 50 but is over 1,400 in 1968. This enrollment trend has been very gradual from decade to decade. The college is now undertaking its second expansion and building program during the past 10 years. In addition to the college, the Christian Orphanage cares for some 80 children.

It can be noted from past growth trends and the college enrollment that the Town of Elon College owes most of its size to the college. See Table II. In addition, an estimated 90 people were annexed into the town between 1960-67. Should the



town annex more territory, the population projections through 1987 could be increased significantly.

TABLE II  
GROWTH TRENDS AND PROJECTIONS, 1910-1987

<u>Year</u>	<u>College Enrollment</u>		<u>Town Population</u> <u>Excluding College</u>	<u>Total</u> <u>Population</u>
	<u>Total</u>	<u>On Campus</u>		
1910	?	?	?	200
1920	?	?	?	425
1930	?	?	?	373
1940	?	?	?	494
1950	693	?	416	1,109
1960	1,242	600	684	1,284
1967	1,450	750	720	1,470
1970	1,650	800	805 <sup>2</sup>	1,605
1973	1,750	1,000	895 <sup>2</sup>	1,895
1977	1,750	1,000	985 <sup>2</sup>	1,985
1980	-- <sup>1</sup>	1,000	1,049 <sup>2</sup>	2,049
1987	-- <sup>1</sup>	1,000	1,113 <sup>2</sup>	2,113

<sup>1</sup> The college has made no off-campus student projections beyond 1977.

<sup>2</sup> Projections are derived by averaging three methods; least squares, arithmetic, and geometric.

#### Current Population

The 1968 population for Elon College including the on-campus students is estimated to be 1,470. To gain a better picture of the population for Elon College and surrounding area, see Table III.



TABLE III  
1967 POPULATION FOR ELON COLLEGE AND SURROUNDING AREA<sup>1</sup>

<u>Area</u>	<u>Dwelling Units</u>	<u>Population</u>
College (campus)		750
Elon College (excluding college)	225	
Elon College (including college)	225	1,470
	+ dormitories	
One Mile Area (excluding cities of Burlington and Gibsonville)	678	2,170
One Mile Area (including cities of Burlington and Gibsonville)	1,045	3,344
Burlington (in one mile area)	323	1,034
Gibsonville (in one mile area)	44	141
Total Area of Elon College and One Mile Area <sup>1</sup>	1,270	4,064

<sup>1</sup> House count by Division of Community Planning x a 1960 Census persons per household of 3.2.

#### Characteristics of the Population

Elon College is somewhat unique in that it has a college whose students account for approximately half of the total town population. This does several things to the population composition that are significant in the development of the town. First, a typical population-age distribution pyramid should have the bulk of the population concentrated in the younger years and fewer people in the older age brackets. Second, since the population of Elon College is so dependent on college enrollment, the town does not have a static population; students leave the college each year and new students arrive. Moreover, college residents are not working members of the community in the sense that they work for a living and are consequently employed in the community. As a result, most towns with a college population must plan to build a community that caters to such a population but which does not provide employment and the like for this population. The results of a sample survey of Elon College homes, which was completed by the Division of Community Planning





in January, 1968, indicate that most of the residents of the town want to maintain the college environment but realize that the town's greatest need is for more college oriented businesses and land uses compatible with the college. Residents want the college to grow rapidly but want the permanent population to grow at a slower rate. Additional population related information from this survey follows.

#### Twenty-Five Percent Sample Survey of Elon College Homes

A list of the most mentioned needs for increasing the population of Elon College as outlined by the residents of Elon College follows. Items are listed by priority which was established according to the number of responses given each item:

1. More shopping facilities in the Elon College area.
2. Improved street conditions.
3. More civic-social advantages.
4. Improved housing conditions.
5. A general clean-up campaign.
6. Need for light industry.
7. Incorporate with Burlington.
8. Better cooperation between the town and the college.
9. Improved water system.
10. Other responses:
  - A. Only college associated people should live in town.
  - B. Need a college associated restaurant.
  - C. Need for better town government.
  - D. Need door mail delivery.
  - E. Need a doctor.
  - F. Need a drugstore.
  - G. Need a local taxicab.
  - H. Need better drainage.

#### Summary

People live in Elon College for primarily two reasons: (1) they are associated with the college either as students or employees. It is estimated that over two-thirds of the residents



of the town are in this category, and (2) they live in Elon College only because it is a "bedroom" community for Burlington-Graham and offers many social amenities which are not present in other areas. As a consequence, Elon College has a population with higher standards of living than most communities, and should accordingly plan to maintain this high level as hoped for by the residents who gave the preceding responses on how to better provide for the population. In the following section these higher than average standards of living will be discussed.







# Standard of Living







## STANDARD OF LIVING

### Introduction

In order to fully understand the people of an area, their standards of living must be analyzed. Basic to the standards of living are income, education, and housing characteristics. The amount of income and degree of education are factors that limit or produce higher standards of living. Data for education and income is not broken down for towns of less than 2,500 population in the 1960 U. S. Census. It is therefore necessary to analyze education and income from a standpoint as it fits into the economy of the Elon College area.

### Education

The educational background for residents of Elon College are similar to the average educational requirements for Alamance County. This similarity is due to the similar professions and occupations of residents of Elon College and those elsewhere in the county especially since the decline of agriculture during the past few decades.

Many residents of the Elon College area are employed in the textile industry or other similar industries that require high school education or less. On the other hand, many residents of the Elon College area need a college education in order to hold management jobs in industry. To go further, college employees, especially teaching and administrative personnel, push the average educational requirements somewhat higher than would be expected in other parts of the county.

Another factor that is significant in educational attainment in Elon College is the availability of good education facilities including a college. It is only natural that more people will avail themselves of a college education if one is located within easy access.

Many older residents of the Elon College area do not have high school diplomas, and they would be at a tremendous dis-





advantage in the area's competitive employment situation. Today such older residents often hold prestigious and high paying jobs because they entered their professions before competition was so keen and have grown into those positions. Without a high school diploma today, this situation is close to impossible.

Because of the high demand for college personnel and college trained managers, salesmen, technicians, engineers, and the like in Alamance County, a large number of the younger people of the Elon College area should attend college. It is encouraging to note that over half of the students enrolled in the college are commuters; consequently, the area is seemingly receiving its fair share of college trained personnel.

Since this area is so industrialized and is projected to continue this trend, it is suggested that the average number of school years completed will gradually increase over the next 20 years. Already the county average for males is 9.3 years and for females 9.9 years. Due to the lack of demand for farm and other rural employees and due to the presence of the college, this figure is estimated to be somewhat higher for the Elon College area.

Some of the residents of the area who need education most are adults who do not have time to attend school during the day; night education for these people will enable them to better their education and consequently raise their income.

A survey by the Division of Community Planning in January, 1968, revealed the following educational attainment:



## EDUCATIONAL ATTAINMENT<sup>1</sup>

<u>Schooling</u>	<u>Percent of Heads of Household</u>
Grammar School and Less	15%
High School: 1 (years)	2%
2	4%
3	6%
4	27%
College: 1	2%
2	8%
3	4%
4 or more	32%

<sup>1</sup> Twenty-five percent sample survey of heads of household.

### Income

Family income levels for the Elon College area are perhaps very similar to those of Alamance County in that there is a small percentage of families whose income is less than \$1,000, and on the other hand there is a small percentage of residents who have family incomes in excess of \$25,000.

Because of the professional jobs available in the college and in industry in the area, the Elon College area has perhaps a smaller percentage in the lower income ranges (under \$5,000) and a larger portion in the higher income ranges than does either the county or the state.

It is felt that the income range for the Elon College area is very similar to that of Burlington where the largest percentage of families within any one income range are in the \$5,000 to \$5,999 category although the second largest is in the \$6,000 to \$6,999 range. The median income range is probably over \$6,000. In 1959 the median income range was \$5,987 for the City of Burlington, \$5,379 for Alamance County, and \$3,956 for the State.

Although the median family income is higher for this area than for many areas in the state, and although there are fewer residents with extremely low family incomes, there are still some residents in the area who suffer from very basic needs





because of low family incomes. This is particularly true of the nonwhite residents of the area most of whom are housed adjacent to the southwest Elon College town limits. Additional job opportunities for unskilled and uneducated residents combined with additional night courses for adults could alleviate this problem tremendously.

The family income level is an important indicator in planning because its level supports retail sales in the area; it determines the condition of housing as a result of its impact on the housing market, and it generally indicates the total economic well-being of an area.

A survey by the Division of Community Planning in January, 1968, supports the information in this section with regard to income:

#### FAMILY INCOME LEVELS<sup>1</sup>

<u>Income (Annual)</u>	<u>Percent of Families</u>
\$0 - \$2,999	6%
\$3,000-\$6,999	49%
\$7,000-\$9,999	21%
Over \$10,000	24%

<sup>1</sup> Twenty-five percent sample survey of family income.

#### Housing

Table IV provides a breakdown of Housing Characteristics for Elon College. This information is from the 1960 Census and has changed somewhat but not enough to distort the overall situation.

The elements listed on the table are factors that compose the general condition of the housing supply and consequently provide some insight as to the "health" of the housing and population of the area. Such factors when analyzed together reveal the extent of substandard housing for Elon College. If left alone, poor housing can expand and worsen, creating slum conditions. It is for this reason that Table V is provided



which indicates the 1950 breakdown for housing conditions from the U. S. Census. Although different methods were used to tabulate these figures, the overall trend is not distorted significantly when listed according to percentages.

Since the 1960 U. S. Census, the housing situation in the Elon College area has changed significantly. In the first place, a number of the older and substandard homes have been removed, some of which have been replaced. A large block of college housing is being removed on the northwestern side of town. A housing count in September, 1967, revealed 225 homes excluding the college and children's home dormitories. Although very little growth has taken place in the town since 1960, a great deal of new residential development has occurred in the fringe area. In addition, the town has annexed 26 additional homes since 1960. There are currently 678 homes in the fringe area that are in neither Burlington nor Gibsonville. In the Cities of Burlington and Gibsonville within one mile of Elon College, there are an additional 367 homes. A great deal of these homes have been built since 1960. Growth is occurring north and southwest of Elon College in the fringe area and east of Elon College inside the incorporated area of Burlington.

It is believed that a larger percentage of the homes in the Elon College area are owned than were owned in 1960. This has been brought about by increased income, additional new homes, and a policy on the part of the college to give up its residential buildings in favor of homeownership on the part of college personnel.

A survey in September revealed an extremely low rate of vacant housing. Most homes that were vacant were either extremely substandard or new, not having been sold because they had just been completed.

Present trends indicate that new housing construction will continue to boom in the Elon College area because of the growth of the whole metropolis of Burlington-Graham-Elon College-Gibsonville-Glen Raven. Most growth will continue to be east





TABLE IV  
HOUSING CHARACTERISTICS - 1960

	Elon College	
	<u>No.</u>	<u>%</u>
All Housing Units	280	
Owner occupied	116	41.43
White	116	
Nonwhite	---	
Renter occupied	134	47.86
White	134	
Nonwhite	---	
Available vacant	7	2.5
For rent	5	
For sale only	2	
Other vacant	23	8.21
Condition and Plumbing		
All Housing Units	280	
Sound	132	47.14
With all plumbing facilities	130	
Lacking some or all facilities	2	
Deteriorating	56	20.00
With all plumbing facilities	54	
Lacking some or all facilities	2	
Dilapidated	92	32.86
Housing Units Occupied by Nonwhites	---	
Sound	---	
With all plumbing facilities	---	
Lacking some or all facilities	---	
Deteriorating	---	
With all plumbing facilities	---	
Lacking some or all facilities	---	
Dilapidated	---	

Source: 1960 U. S. Census of Housing.



TABLE V  
HOUSING CHARACTERISTICS FOR ELON COLLEGE - 1950

	<u>No.</u>	<u>%</u>
All Housing Units	464	
Owner occupied	276	59.49
White		
Nonwhite		
Renter occupied	183	39.43
White		
Nonwhite		
Available vacant	---	
For rent		
For sale only		
Other vacant	5	1.08
Condition and Plumbing		
All Housing Units	448	
Sound	250	55.81
With all plumbing facilities		
Lacking some or all facilities		
Deteriorating	182	40.62
With all plumbing facilities		
Lacking some or all facilities		
Dilapidated	16	3.57
Housing Units Occupied by Nonwhites	44	
Sound		
With all plumbing facilities		
Lacking some or all facilities		
Deteriorating		
With all plumbing facilities		
Lacking some or all facilities		
Dilapidated		

Source: 1950 U. S. Census of Housing.





and south of the town with a subdivision developing north of the town as other land fills. Eventually the area to the west of the town will develop and finally the gaps in between will begin developing by 1985.

It should be pointed out that some excellent residential land is still available inside the Town of Elon College. Most of this land lies to the south and southeast. Truitt Drive is the beginning of an excellent subdivision in this area.

The overall condition of housing for Elon College is not as bad as was indicated in the 1960 Census, when more than 50 percent of the homes were substandard, because of the construction of new homes and consequently the removal of some substandard homes. Nevertheless, there are several spots of substandard housing in town which need to be removed. Moreover, a sizeable concentration of substandard housing lies just outside the southwest corporate limits. Cheaper new housing needs to be provided for these residents.



# Economy







## ECONOMY

Before the economy of the Elon College area can be fully understood, it is necessary to examine the economy of the region in which it is located.

The number of residents in this region employed in manufacturing exceeds the number of residents employed in agriculture. Significant among the manufacturing industries is textile mills, especially around the Elon College-Burlington area where approximately 40 percent of the labor force works in the textile industry. This dependence on textiles has been reduced somewhat during the 1960's and this trend will probably continue as the whole area becomes more diversified. Some of the new industries include electronics, guidance equipment for missiles, and a transportation depot.

A region that is more specific and has more bearing on the economy of the Elon College area is the Piedmont Crescent discussed and illustrated earlier in this report.

### Employment

A large percentage of the residents of the Elon College area are employed in manufacturing, more specifically textiles. While this has an advantage over many occupations, such as farming, it has disadvantages too. First, too much faith in one type of industry such as textiles can lead to good times and bad times as the industry is affected by the business cycle and supply and demand. Second, while wages for textile workers are often good compared to agriculture, they are not as good as in many other industries.

Another sizeable group of the residents of the Elon College area are employed by the college. There are currently over 100 faculty members in the college as well as additional personnel that are required in the operation of this institution.

The balance of the residents of the region are employed primarily in other industries - retail trade, food processing, furniture, and the like.





Comparisons between occupations of whites and nonwhites in the region indicate that nonwhites hold more of the semi-skilled and unskilled jobs in the area. This again indicates the need for jobs for unskilled workers along with the need for adult education.

### Employment Opportunities

The Employment Security Commission of North Carolina made an estimate of recruitable workers for industrial expansion for the area of Elon College in June, 1967. The labor recruiting area included a radius of 15 road miles from Elon College or approximately 20-25 minutes driving time. This study indicated that there are 1,125 trained workers available for manufacturing jobs in this area. In addition, there are 640 trainable workers in the area. In the last school year (1966-67) there were 595 people who were available for the work force after high school graduation. Tables VI and VII provide a breakdown of the available work force as indicated by the Employment Security Commission.

### Worker Availability

In talking with employers in the Elon College area, the general situation which they describe for their respective industries is that there are plenty of semi-skilled or unskilled workers available. To go further, some maintain that many available jobs require no special skill. The real problem, it seems, is that there are not enough employees in the area who fit the high caliber jobs that are available in management, sales, and the like. Such workers often have to be recruited from elsewhere in the state or nation. To contend with this problem, younger people living in the Elon College area should further their education beyond the high school level and should be attracted back to the area.

As a consequence of the growth of this metropolitan area, there is a need for many skilled tradesmen such as carpenters,



TABLE VI  
NUMBER OF RECRUITABLE PRODUCTION-RELATED WORKERS WITHIN AREA

Miles	Total	Total Available Workers		Experienced Manufacturing Workers		Type of Worker			
		Male	Female	Male	Female	All Other Experienced Workers		Inexperienced But Referable And Trainable	
						Male	Female	Male	Female
Total	1,125	395	730	70	135	115	165	210	430
0 to 15	1,125	395	730	70	135	115	165	210	430
15 to 20									
20 to 25									

TABLE VII  
SELECTED EXPERIENCED MANUFACTURING WORKERS, BY INDUSTRY

Industry	Processing		Machine Trades		Bench Work	
	Male	Female	Male	Female	Male	Female
Textiles Including Hosiery	50		60			25
Electrical Machinery	10		10			5
Furniture	--		--			5

Source: Employment Security Commission of North Carolina.





masons, electricians, plumbers, and others. As this area expands, the need for such people will increase.

As a consequence of this growth, there will also be an added need for businessmen and professional people such as doctors, lawyers, and engineers.

### Commuting

Because of the excellent highway system that serves the Elon College area and because of the closeness of other large metropolitan areas, there is a noteworthy commuting pattern for the residents of the Elon College area. By way of Interstate 85, Greensboro is but 15-20 minutes from the Elon College area; as a consequence, many residents of the area work in Greensboro. In addition, since Elon College and Burlington-Graham are so close together, residents often live in one area but work or shop in another. Due to the limited commercial activity in Elon College, most of the residents of Elon College shop in Burlington or Glen Raven. Moreover, many of the residents of Elon College work in Burlington and the reverse is also true to a much lesser degree because some people reside in Burlington but work in Elon College. It is difficult to determine this commuting pattern because of the inner-dependence of one town on another. In order to have a less mobile population, Elon College needs (1) more commercial establishments and (2) more industry.

Because of the excellent highway system, commuting patterns can often be an advantage to the Elon College area in that good industry and retail trade areas can act to draw residents whereas more residents are commuting out rather than in at present. In other words, the transportation facilities are available; the area now needs more "drawing cards". If such drawing cards were available, more residents from rural areas would perhaps work and shop in the Elon College area and perhaps eventually move to the community.



## Retail Trade

### Elon College:

The Elon College Planning Area does not have a retail trade center other than the small college oriented businesses along Williamson Street near the heart of town. Included in this area is a small grocery store, a laundry, the city hall, a cafe, a vacant shoe shop, a soda shop, a dry cleaning establishment, a barber shop, a furniture store, a miniature golf area, and a billiards parlor. The grocery store and the furniture store depend more on the residents of the town for trade while the other establishments depend more on the college campus.

### Region:

When speaking of the retail trade area of Elon College one almost instantly refers to the City of Burlington for it is here where most of the residents living in the Elon College area shop for food, clothes, furniture, appliances, and other consumer items. Not only does the City of Burlington serve the immediate area but it has developed into a regional shopping center and draws on surrounding counties. The following statistics illustrate the impact of Burlington on the economy of Alamance County:

- (1) Burlington accounts for 66 percent of Alamance County's retail sales.
- (2) Burlington accounts for 72 percent of Alamance County's wholesale sales.
- (3) The city contributes 68 percent of the value added by manufacturing for Alamance County.
- (4) The city is responsible for 61 percent of the total selected services for Alamance County.<sup>1</sup>

In addition to the retail trade in Burlington, many residents of the Elon College area go to Greensboro to shop especially for clothing and durable items.

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<sup>1</sup> Burlington Population and Economy (Chapel Hill: City Planning and Architectural Associates, 1963).



### Future Retail Trade of the Elon College Area

Elon College cannot hope to compete with the region on retail trade but it can successfully improve the present situation by developing any or all of several situations:

- (1) The Elon College commercial area can improve and expand somewhat with commercial establishments that serve the college population. The existing stores along Williamson Street need new fronts and other renovations.
- (2) The area needs to attract a large grocery chain that can provide food items and the like for residents thus enabling them to shop in the Elon College area rather than in Burlington or Glen Raven.
- (3) Specialty shops such as antique stores, novelty stores, gift shops, and the like can become a part of the retail trade area and even draw on Burlington when similar stores are not in Burlington. Chapel Hill has been successful in this respect in relation to Durham, Southern Pines in relation to Aberdeen, and Carrboro in relation to Chapel Hill.
- (4) A large shopping center located west of Burlington in the one mile area can draw residents from the surrounding area.

### Economic Potential

Any area has certain economic assets and liabilities which consequently determine the total economic picture for the area. In the case of the Elon College area, it is quite evident that economic growth is not a product of isolation, but is affected by the total region in which it lies. On the other hand, certain segments of the Elon College area are unique and lend themselves favorably to the future economic development of the area. These assets to the economy are:

- (1) The location.
- (2) Availability of transportation.
- (3) Presence of a college.
- (4) Adequacy of the labor force.





- (5) Adequacy of community facilities.
- (6) Adequacy of land uses.

### Location

The inter-related economy of the cities of the Piedmont Crescent act as an advantage to each separate political entity within this region because new industry often hopes to locate wherever there is existing industry, schools, retail trade areas and the like. Such growth can be detected in any interval of time during the past 50 years. For example between 1947 and 1954 over 1,000 manufacturing plants located within the Industrial Piedmont. Locational attractions have worked most favorably for the Piedmont Crescent but if this trend is to continue good planning must always precede development. Industry desires zoning, a comprehensive plan, adequate community services, and conscious efforts on the part of local government to meet industrial needs.

### Transportation

Industry needs a variety of good transportation facilities in order to ship and receive products as cheaply as possible.

The Elon College area is well blessed with this variety of transportation including highways, railroad connections, and air facilities. Among the major highways is Interstate 85 with connections to other interstate highways. In addition U. S. 70 runs east-west across North Carolina and lies within the one mile planning area for Elon College. Furthermore, N. C. 100 serves as a connector between Elon College and U. S. 70 and I-85. A large market is at the fingertips of industry as a consequence of the very adequate highway system in the area.

The Southern Railway Company operates a railroad line through Elon College which eventually has major north-south and east-west connections. Some industry depends heavily on railroads and without this vital asset Elon College would be at a disadvantage in recruiting new industry.



The closest airport to Elon College is in Burlington but it serves only private and business planes. Located in Greensboro just 25 miles away is the Greensboro-High Point Airport which provides commercial, passenger, and freight service to points almost anywhere in the world.

### College

The recruiting ability of industry is measured not only in terms of what industry can do for employees but also in terms of what the region in which the industry is located can add to the employees well being. As a consequence the college is a definite asset to the recruiting ability of an industry because it provides an employee benefit not found in many communities.

To go further, as the college expands it creates new jobs and adds more money to the local economy. More students mean more trade for local merchants and more jobs as a consequence of the need for more college personnel.

### Labor Force

Since the labor force for the Elon College area could come from within 15-20 miles of the town and since figures for the town are not available, the county figures are used to illustrate the strength of the labor force.

There were approximately 31,500 persons in the Alamance County labor force in 1950. This figure grew to 38,200 in 1960 and is estimated to be approximately 50,000 in 1967. Table VIII indicates a breakdown of occupation in Alamance County for 1950 and 1960. The rate at which workers become available is discussed in an earlier section of this report.

While the Employment Security Commission reports no serious shortage in the total labor supply in the Elon College area, it does report that a shortage of labor in certain categories and a saturation of employees in others. The Commission points out that the growth and expansion of the hosiery industry, plus replacement hiring, has created a greater demand for workers than in any other industry.





TABLE VIII  
ALAMANCE COUNTY LABOR FORCE 1950-1960

	1950		1960	
	No.	%	No.	%
Professional, Technical & Kindred Workers	1,527	4.8	2,828	7.4
Managers, Officials & Proprietors (Except Farm)	1,969	6.2	2,140	5.6
Clerical & Kindred Workers	2,099	6.7	4,210	11.0
Sales Workers	1,711	5.4	2,101	5.5
Craftsmen, Foremen & Kindred Workers	3,827	12.3	4,802	12.6
Operatives & Kindred Workers	12,140	28.4	12,256	32.9
Service Workers, Ind. Private Household	2,538	8.1	3,429	9.0
Laborers, Except Farm & Mine	1,377	4.4	1,314	3.4
Occupation Not Reported	459	1.5	1,685	4.4
Subtotal Non-Agricultural Employment	27,647	87.8	35,035	91.8
Farmers & Farm Managers	1,925	6.1	1,287	3.4
Experienced, Unemployed	875	2.8	1,311	3.4
Farm Laborers & Foremen	1,032	3.3	533	1.4
TOTAL LABOR FORCE	31,479	100.0	38,166	100.0

Source: Burlington Population and Economy Study.



### Community Facilities

Just as a college is a vital asset to industry other community services are important drawing cards too. Industry as well as the employees of industry rely on water and sewer services, police and fire protection, and other basic community facilities more than can be realized. It is important to note that the Elon College area now has a water system that is joined with Gibsonville, Graham, and Burlington. This system with modifications from time to time, will last for many years. In addition a new sewerage plant has recently been built in Elon College and will be adequate for the future expanding population. Other services that are very basic can be expanded to meet the needs of urban growth. All community facilities for Elon College will be discussed and planned for in a later report.

### Adequacy of Land

Land for different uses must be available for future urban growth if an area hopes to expand. It is fortunate for the Elon College area that enough vacant land for residential, commercial, industrial, and other type uses is still available in the planning area. This Planning Program in part will determine how much of each land use is needed and where that land use should be located.

### Summary

It can be noted that Elon College has very little "home" economy except for the college. The study of the economy of Elon College is the study of a big neighborhood adjacent to a metropolitan area.

If Elon College expects to grow and prosper as a separate political entity, it must strengthen its economy. It is significant to note that over 50 percent of the property inside the corporate limits is tax exempt. In addition, that property which is taxable is almost entirely developed for residential purposes. New industry is needed in order to strengthen the tax base. Even



though industry is not easy to attract, the town should be selective in getting new industry located here. Elon College has several cultural amenities which it should strive to protect. It is for this reason that the town should work with the college in attracting new industry. There is an advantage in not having an abundance of industry in Elon College for as the town builds it can be selective in the type and location of industry that will make the economy compatible with the college and other amenities in the area.

Until the economic base is strengthened, it is somewhat presumptuous to expect new retail trade areas or improved old ones but these things will inevitably come as a result of economic growth.







# Land Use Survey & Analysis





## LAND USE SURVEY AND ANALYSIS

### THE PHYSICAL ENVIRONMENT

#### Introduction

Before land can be planned for urban development it must meet certain conditions which are a part of the natural environment. Such physical characteristics may limit or encourage urban development or may affect one type land use adversely while complimenting another. Among the most noted physical characteristics which should be studied before planning land use are topography, ground water, surface water, drainage, soil and climate. If urban growth is planned in accordance with these physical characteristics, a better and less costly community can evolve. Physical characteristics for the Elon College area will be discussed in the following pages.

#### Topography

The relief of the Elon College area is similar to the rest of the Piedmont Section of North Carolina in that it is made up of gently sloping land. Seldom does the slope exceed 20 percent anywhere in the region except along the banks of rivers and streams. Approximately 90 percent of the land has a slope of less than 5 percent.

Elon College rests at the intersection of two ridges which are 723 feet at their summit near the college and slope in all directions away from the town. To the east of town and within the one-mile fringe area the elevation is approximately 650 feet, to the southeast 625 feet, to the southwest 639 feet, to the west 675 feet, and to the north 634 feet. These points are often in drainage areas. Even though this gradual decline in elevation away from the incorporated area is present, it is not as observable as would be expected because of the rolling character of the topography between the incorporated area and the limits of the one-mile fringe area.





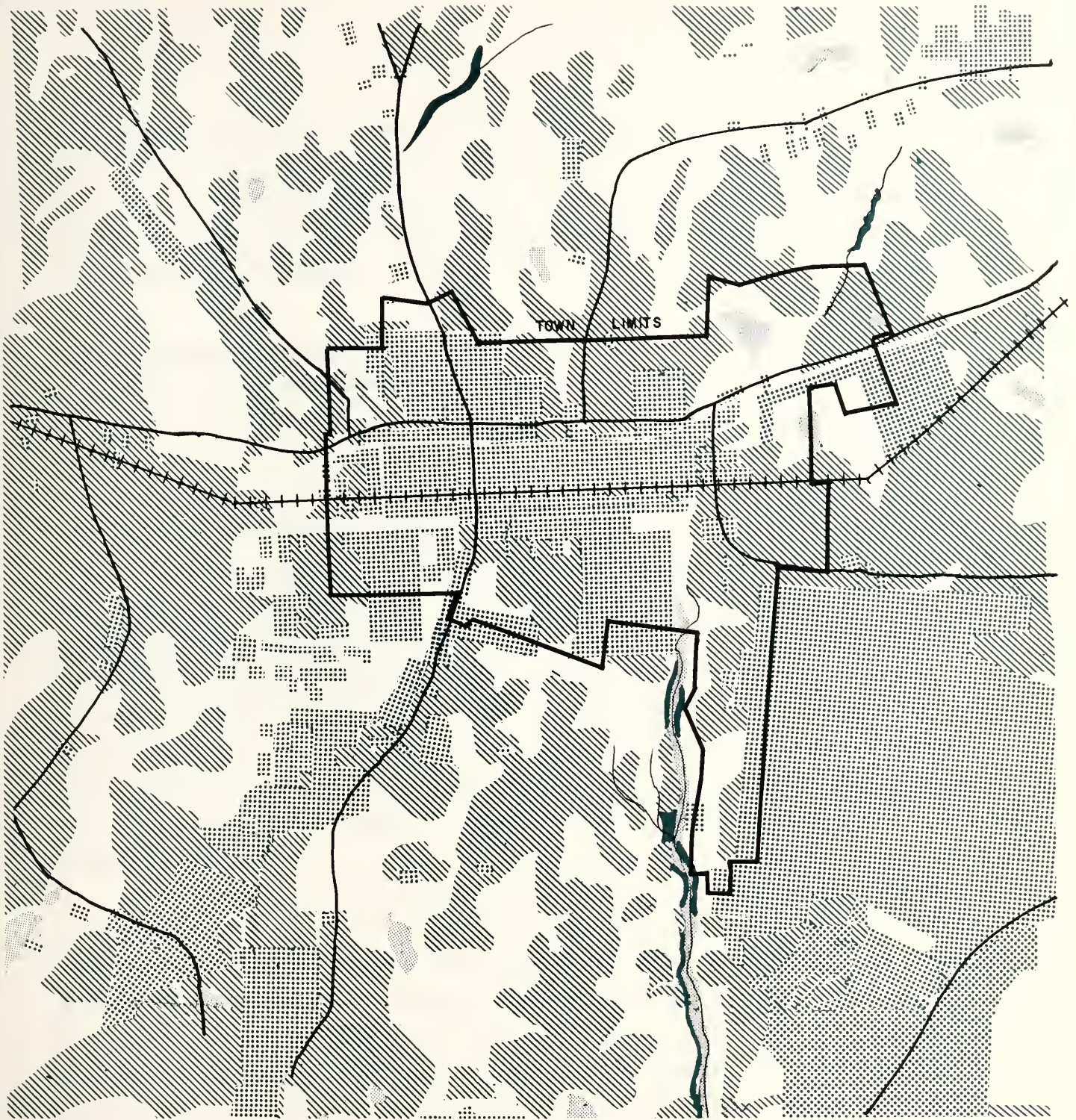
The topography has a marked influence on urban development in Elon College because of the difficulty involved in serving the area on a gravity sewerage system. The sewer treatment plant is located southeast of town at an elevation of 650 feet which makes it impossible to deliver sewage from north of town to the plant without utilizing a pumping station. The same is true of other parts of the planning area because of the rise and fall of the land.

One other problem created as a result of the topography is the numerous drainage basins. Urban growth is curtailed slightly as a consequence of poor surface drainage which will be discussed later but is indicated on the Land Use Suitability Map which follows.

Also indicated on the Land Use Suitability Map are slope percentages for the Elon College area. Slope is the amount of rise or decline in elevation over a specific horizontal distance and it is expressed as a percentage. For example, 20 feet rise in elevation over a horizontal distance of 100 feet is a 20 percent slope. For proper urban growth there is a minimum and a maximum slope suitability for any particular land use. Generally, land with only a slight grade is suitable for most any land use but since such land is often limited in quantity it is best to use it for more intensive land uses such as for commercial or industrial purposes. A slope of 2 to 5 percent is therefore preferable for commercial and industrial development. Residential land uses should not exceed 10 percent in this region. Slopes of up to 20 percent can be used for scattered residential development if planned with terraces or strip development and the like. Since this steep land is usually expensive to develop, it is best to preserve it for recreation or open space. On the Land Use Suitability Map, it can be noted that a very limited amount of land exceeds 15 percent slope and none exceeds 20 percent. All of the land exceeding 15 percent slope is located along the banks of drainage areas and should not be used for urban purposes anyway. Even though the slope is suitable for urban purposes in some areas, care should be taken not to construct






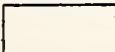
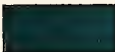




# ELON COLLEGE

## NORTH CAROLINA

### LAND POTENTIAL

#### LEGEND

-  Slope 0-5%
-  Slope 5-15%
-  Slope Over 15%
-  Developed Land
-  Land Subject To Flooding



SOURCE:  
US GEOLOGICAL SURVEY  
TOPOGRAPHIC MAPS





buildings where the surrounding slopes incline toward the building site. There are currently some structures in Elon College which become flooded in heavy rainfall because they are built in such areas. The following section on surface water discusses this problem further.

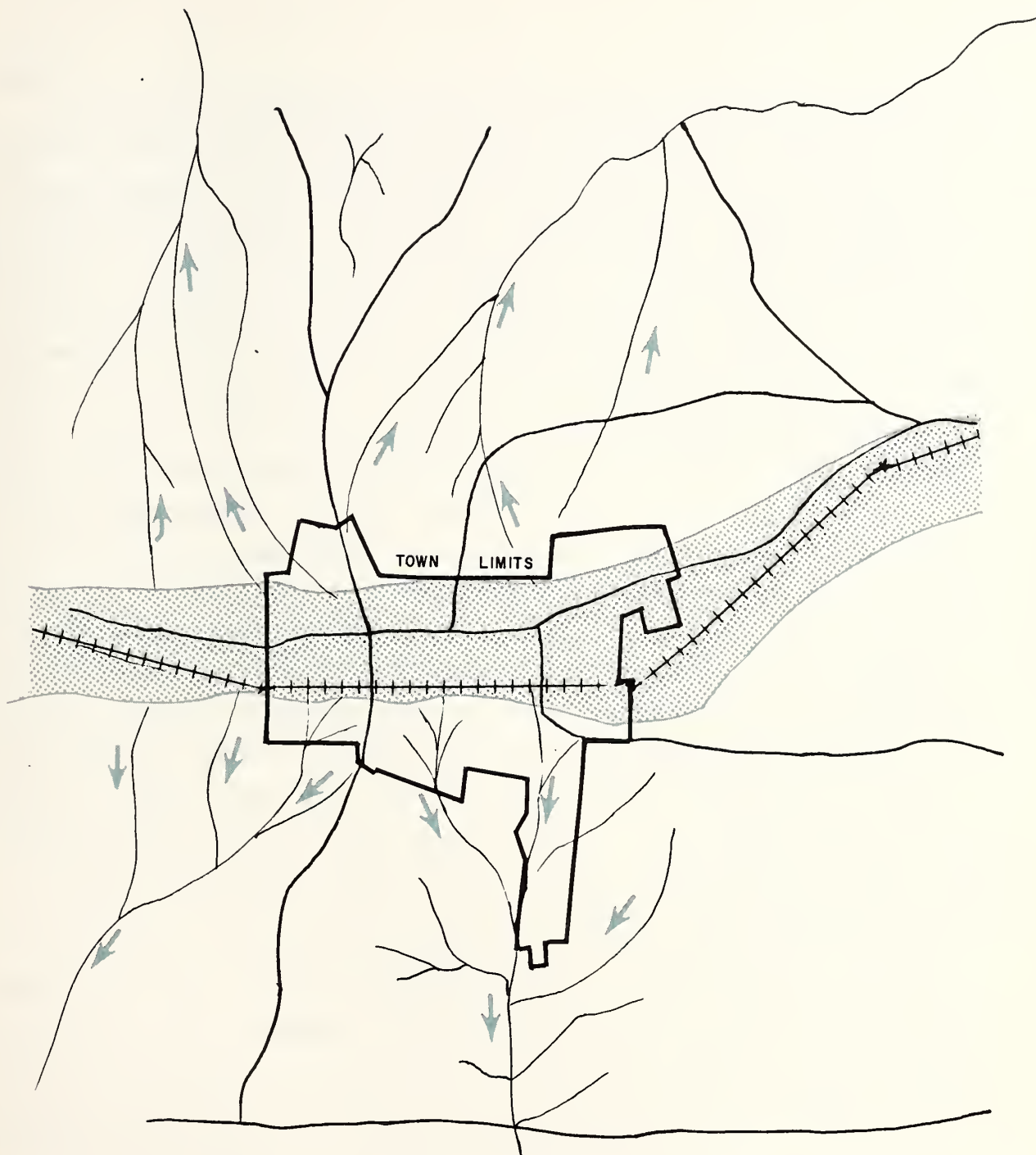
#### Surface Water and Drainage

Because of the absence of large streams, most water for domestic and industrial uses comes from underground sources. This is true of both the incorporated area and the fringe area which is for the most part served by individual wells. An exception to the underground water supply has been recently planned by joining the municipal water systems of Burlington and Elon College. Burlington's raw water comes from two lakes -- City Lake and Stoney Creek Lake, both located on Stoney Creek north of the city. Elon College plans to join to the Burlington water system because wells, both municipal and private, become undependable in dry seasons. The undependable wells are created as a result of bedrock in the area which is too near the surface and since the water level is just below the rocks the wells often go dry.

Storm water drains in two general directions in the Elon College area - north and south. The railroad follows a ridge running east-west through town which acts as a drainage divide. North of the railroad surface runoff is carried into Haw River by Travis Creek and several other small tributaries. South of the railroad surface water is carried by Gum Creek and other tributaries which eventually empty into Haw River southeast of Elon College. Flooding along these tributaries is common in heavy rainfall. In addition several areas indicated on the Land Use Suitability Map which precedes this section are subject to flooding because they act as pockets for declining slopes and often catch an overabundance of runoff. Such areas are best used for either recreation or open space. See Drainage Map which follows.










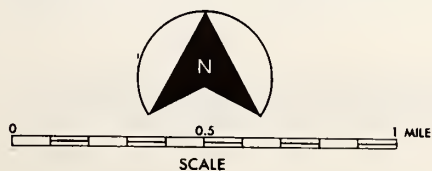
# ELON COLLEGE

## NORTH CAROLINA

SURFACE DRAINAGE PATTERN

### LEGEND

-  General Direction of Runoff
-  Drainage Channels
-  Drainage Divide



Source:  
Topography Maps and Field Survey by  
The Division of Community Planning



## Soils<sup>1</sup>

The Central Piedmont Plateau on which Elon College is located is part of an uplifted plain that has been dissected to various degrees. Resistant rock underlies most of the area around Elon College. This rock is greenstone schist which is chiefly volcanic in origin; however, to the east of the area around Burlington, the rock is shredded granite which is mostly coarse grained. Problems created by this rock layer have previously been discussed in regard to underground water. In addition, parts of the area, especially when eroded, sometimes have rocks protruding from the ground and as a result often prevent utilization without heavy expense.

The rocks previously mentioned and other types that are found in the Elon College Planning Area are responsible in part for the soil associations found in Elon College. Soil associations are groups of soils that are similar and occur together because they are manufactured by similar mixtures of fragmented and partly or wholly weathered rocks and minerals, organic matter, water, and air. For the most part, the Elon College Planning Area has two soil associations: (1) Enon-Lloyd-Cecil, (2) Helena-Vance-Appling; however, other associations that occur in spots are (1) Davidson, and (2) Iredell. The characteristics of soils often dictate requirements in planning urban growth. Since some soils impede various types of urban development such as streets and highways, septic tanks, industrial construction, and building foundations, a detailed chart follows which indicates the suitability of various soils in the Elon College area for indicated types of urban development.

A generalized map follows this section. It can be noted that soils have been grouped into five classifications according to their degree of suitability as summarized from the preceding table. More than one type soil might be indicated by one color; however, each soil in that particular color has similar limitations

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<sup>1</sup> Soil Survey, Alamance County, North Carolina, U. S. Department of Agriculture, Washington 25, D. C.



TABLE IX

## SOILS

Soil	Range In Slope	Natural Drainage	Depth To Bedrock	Recommendations For Location Of Highway Grade Line	Suitability For: Topsoil	Suitability For: Fill Dirt	Earth Dams	Suitability For: Septic Tank Field	Depth To Seasonally High H <sub>2</sub> O Level <sup>2</sup>
Enon	2-15%	Good	3-8'	Anywhere	Poor to Fair	Fair	Good - difficult to work when wet	Poor	8+'
Lloyd	2-25%	Good	5-8'	Anywhere	Good	Fair	Fair	Good	8+'
Cecil	2-25%	Good	6-15'	Anywhere	Good	Fair	Fair to Good	Good	8+'
Helena	2-10%	Moderately Good	5-15'	Anywhere	Fair to Good	Fair	Good	Poor	4-8'
Vance	2-15%	Good	6-15'	Anywhere	Fair to Good	Fair	Good	Poor	8+'
Appling	2-25%	Good	6-15'	Anywhere	Good	Fair	Good	Good	8+'
Davidson	2-15%	Good	6-25'	Anywhere	Fair	Fair	Fair	Good	8+'
Iredell	0-10%	Moderately Good	2-8'	Anywhere	Poor	Not Suitable	Good	Poor	3'

Source: Soil Survey, Alamance County, North Carolina. U. S. Department of Agriculture.







# **ELON COLLEGE** **NORTH CAROLINA**



## SOIL SUITABILITY FOR URBAN USES



- Good
- Fair to Good
- Poor
- Very Poor
- Severe Limitation



or qualifications for urban development.

### Climate

The climate of the Elon College area like most of this region of the Piedmont is affected by both the Atlantic Ocean and the Appalachian Mountains. The summers are long and moderately hot, and the winters are generally mild. The average temperature range is from 41.2° in January to 78.8° in July. The absolute minimum temperature is -6° in February and the absolute maximum temperature is 107° in July. The length of the average growing season is 209 days.<sup>1</sup> The average precipitation range is from 2.40 inches in November to 5.40 in July, and the wettest season is spring. Total average rainfall is 46.60 inches per year.<sup>2</sup> Rainfall, for the most part, is plentiful and generally well distributed throughout the year. Snowfall is light and does not remain on the ground for long periods.

The prevailing winds are from the southwest, except during the fall (September and October) when they are from the northeast. Wind velocity seldom reaches a destructive speed except when a hurricane moves inland from the Atlantic Ocean.

### Summary of Physical Limitations on Urban Development in the Elon College Planning Area

Following is a summary of the physical limitations that affect land development as discussed in the preceding section.

1. Steep slopes are found along Gum Creek southeast of town and just east of the intersection of Elon-Osspiee and Shallowford Church Roads north of town. All other areas are not affected by steep slopes. See map on page 33 (Land Use Suitability Map).
2. Drainage basins run through a large amount of undeveloped land in areas where future subdivisions may be built.

<sup>1</sup> Information compiled from records at the United States Weather Bureau in Chapel Hill, Orange County.

<sup>2</sup> Information compiled from records at the United States Weather Bureau in Graham, Alamance County.



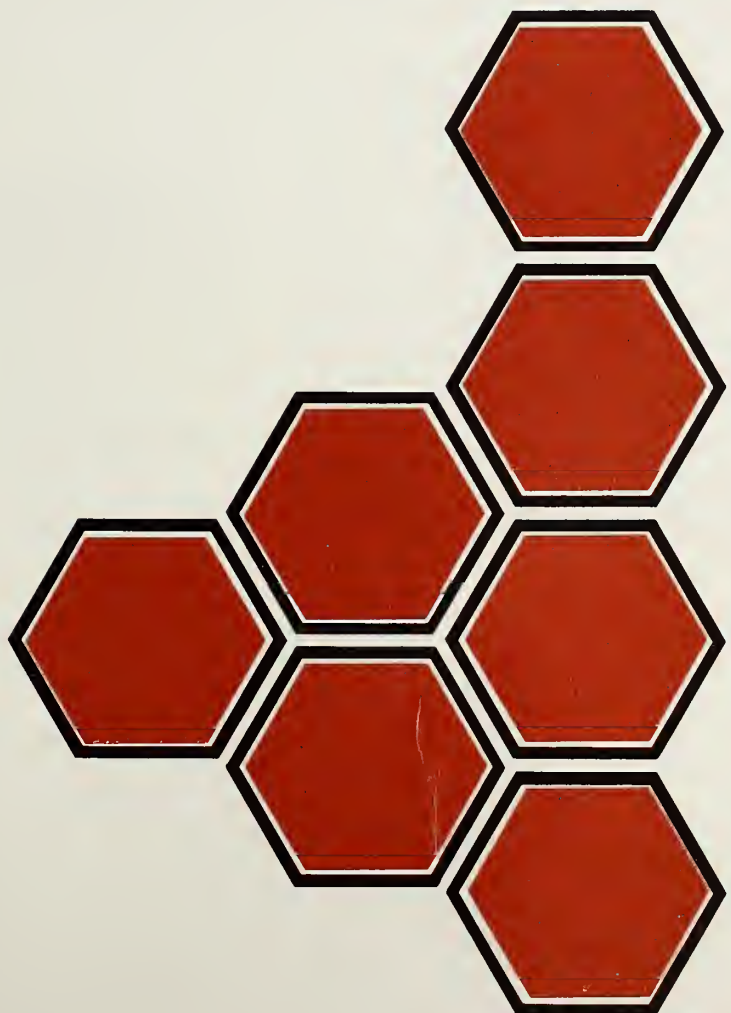


3. Land is spotted throughout the planning area in addition to drainage channels that is subject to flooding.
4. The undependable underground water supply is a limitation on large subdivisions outside the municipal water systems.
5. The topography often limits the possibility of gravity sewage flow without pumping facilities. This is especially true north of the town.
6. There are many areas that are unfit for septic tanks because of the soil conditions. Such areas are spotted and soil tests should be made before selecting a construction site where a septic tank will be utilized. See map on page 38 (Soil Map).
7. Since the prevailing winds are from the southwest most of the year, land uses creating smoke, noise, and odor should not be located in the south or southwest part of the planning area.
8. A large utility transmission line is a barrier to development in southeast Elon College and across the northern fringe of the one mile area.
9. The railroad which runs through town is a barrier to residential development but an asset for industrial development.





# Use of the Land







## USE OF THE LAND

The existing land use pattern has a significant effect on the Land Development Plan. It is therefore imperative for the Planning Board to determine where types of land use exist in order to develop other complementary land uses around existing uses. A field survey has recorded all existing land uses in Elon College and the fringe planning area. The land use information is present on the Generalized Land Use Map which follows. A Land Use Map has been prepared at a scale of 1 inch for each 400 feet and is on file at City Hall.

The land use on the following map is divided into six categories:

- Residential
- Commercial
- Industrial
- Cultural & Recreation
- Transportation
- Vacant

Table X is a summary of these land uses by number of acres, by percent of developed land, and by percent of total available land. This information is presented for both the town and that part of the one-mile fringe area which lies within the legal zoning jurisdiction of Elon College. See the map on page 5 (Planning Area Map).



TABLE X  
USE OF LAND BY GENERALIZED CATEGORIES FOR  
ELON COLLEGE PLANNING AREA

Type of Use	Incorporated Area			Unincorporated Area <sup>1</sup>		
	Acres	Developed Total		Acres	Developed Total	
		Area %	Area %		Area %	Area %
Residential	185	52%	36%	272	49%	12%
Commercial	2	.5%	--	7	1%	.3%
Industrial	1	.3%	--	5	1%	.2%
Cultural & Recreation	103	29%	20%	159	28%	7%
Transportation	64	18%	12.5%	117	21%	5.1%
Vacant	157	--	30.6%	1730	--	75.6%
Total	512			2290		

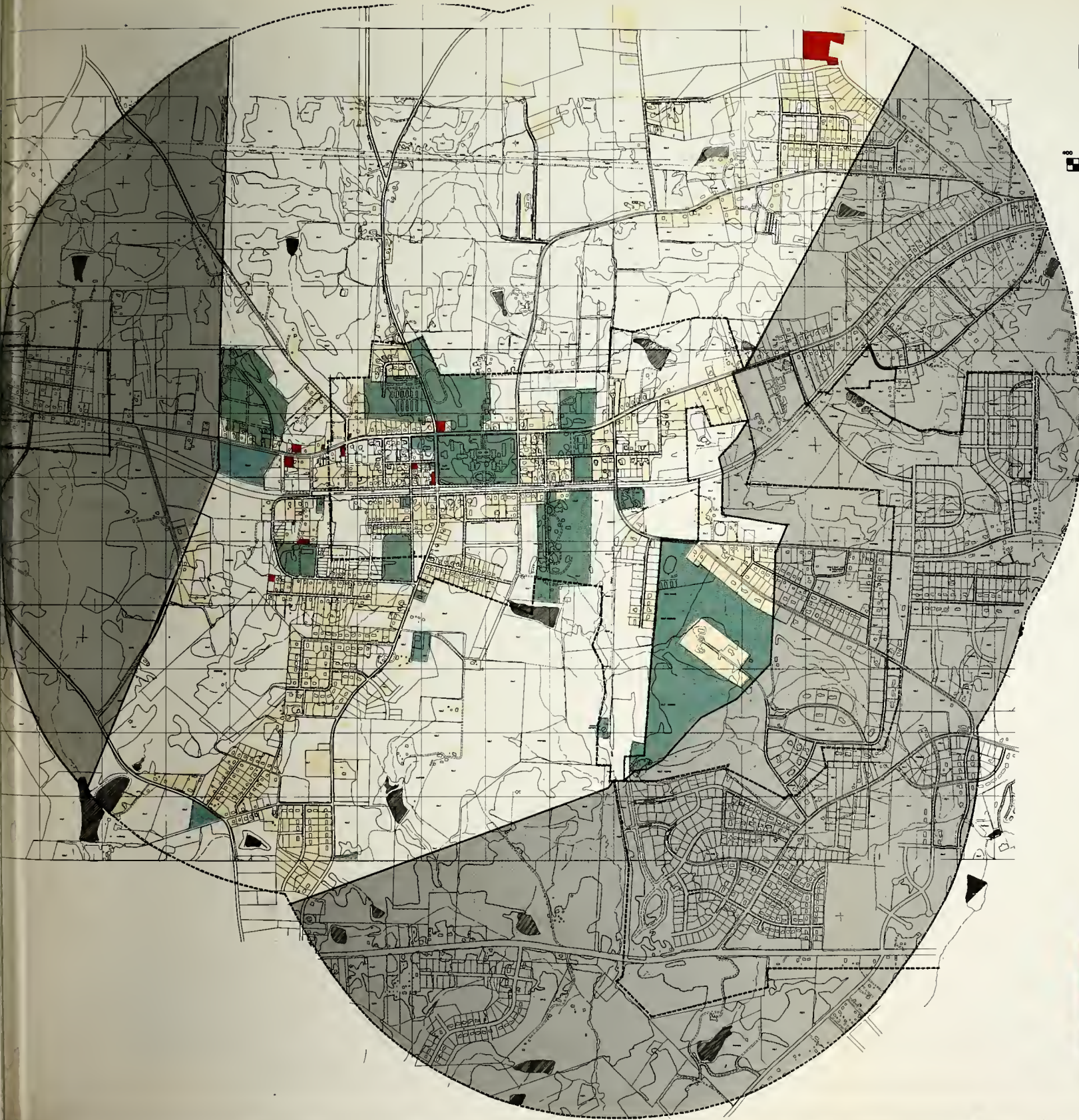
<sup>1</sup> Excludes City of Burlington and Town of Gibsonville within one-mile area of Elon College and their legal jurisdictions as indicated on the map on page 5 (Planning Area Map).



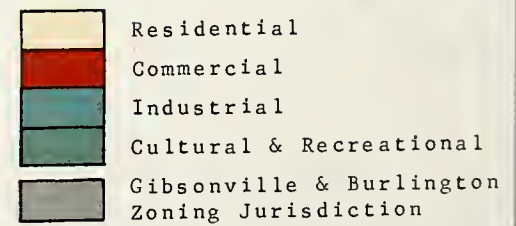


# ELON COLLEGE

## NORTH CAROLINA



EXISTING LAND USE







## LAND USE IN THE ELON COLLEGE PLANNING AREA

### Introduction

A land use classification system was utilized in categorizing land use in the Elon College Planning Area. Each land use will be discussed in some detail in this section. The different classifications are as follows:

1. Residential - land use that is the site of a dwelling unit that is occupied by one or more families.
2. Commercial - land use that is the site of a business establishment which provides retail or wholesale trade functions.
3. Industrial - land use that is occupied for the purpose of manufacturing, fabricating, extracting, or constructing and composing products.
4. Cultural and Recreation - land use that is utilized for education, recreation, worship, and similar uses.
5. Transportation - land use devoted to highways and railroads rights-of-way.
6. Vacant - land that is either forested, pastured, farmed or otherwise not utilized for urban purposes.

Following are some of the goals sought in this section:

- A. The intensity of land use will be determined.
- B. The amount of area utilized for each land use will be calculated.
- C. An understanding of the locational characteristics of different land uses or activities will be achieved.
- D. The location of past and present land use trends will be outlined in order to plan future growth accordingly.
- E. Locations for residential, commercial, and industrial activities will be suggested for the Land Development Plan. In addition sites for future





public recreation areas, schools, highways, and other facilities can be visualized.

#### Total Land Use .

There are 2,802 acres, or approximately 6.5 square miles, of land in Elon College and the one-mile fringe area over which it exercises jurisdiction. Five hundred and twelve of these acres are within the corporate limits of Elon College. Considering the total 2,802 acres, 33 percent is in urban uses and 67 percent is vacant. A breakdown of land uses is listed in Table X. Most of the developed land in the one-mile fringe area lies east of Elon College. In addition a large strip of intensively developed land lies southwest of Elon College along Williamson Street to the end of the one-mile planning area -- west of town, land is approximately 50 percent developed to the corporate limits of Gibsonville which lies in the one-mile planning area. Most of the vacant land in the fringe area lies north of town where only scattered residential development occurs along highways. The next largest section of vacant land lies east of Williamson Avenue south of town. Both of these large vacant areas are legally under the zoning jurisdiction of Elon College and will prove vital for urban growth in the land development plan. Further discussion of land uses will be limited to the area that can legally fall in the zoning jurisdiction of Elon College. The Planning Area Map on page 5 is included to define this area.

#### Residential Land Use

##### Town:

Residential development within the corporate limits of Elon College composes 36 percent of the total land area and 52 percent of developed land.

Since Elon Christian College and the Elon Home for Children occupy most of the central section of town, residential development has occurred (1) mostly west of Williamson Avenue, (2) north



of the railroad and east of O'Kelley Street, and (3) due south of the college.

New residential growth within the town is located primarily along (1) Truitt Drive in southeast Elon College and (2) along Arcadia Drive in northwest Elon College. Some new growth has started in the eastern part of town along Lawrence Street.

Almost all of the housing in Elon College is single family, exceptions being spotted sparsely, with the bulk of multi-family housing located in one apartment complex with 24 units and another with 8 units both of which are on Lebanon Avenue. A larger number of multi-family housing units were indicated in the 1960 Census because of the presence of a complex of married student housing units owned by the college which has been abandoned and is being destroyed.

Most of the homes in Elon College are not affected by adverse environment as a consequence of incompatible land use. This is due in part to the limited amount of industry and commercial areas within the incorporated area. It is fortunate that the town can devise a land development plan before the adverse effects of mixed land use occur. The most obvious adverse effects of the environment on residential areas are unpaved streets, as are indicated on the Street Conditions Map, the presence of the railroad, and major traffic carrying streets in residential areas.

Although most of the homes in Elon College are in excess of 20 years old, they are located on large lots and are well kept. Substandard housing is present, however, and will be discussed in a later section of this report.

The overall design of residential areas renders a rather attractive appearance and a very practical layout. Most of the streets in residential areas are of the gridiron pattern with adequate rights-of-way and few dead-end streets. Homes are located on rectangular lots with adequate frontage and side yards for the most part.



Most of the vacant land within the corporate limits is suitable for residential purposes with regard to slope, soil, drainage, and other physical factors. Care should be taken to maintain the quality that is present in existing residential areas. A zoning and housing code can insure such quality.

#### Fringe Area:

Residential land use encompasses 49 percent of the total developed land and 12 percent of the total land within the one-mile extraterritorial zoning jurisdiction of Elon College. Until the last 10 years residential development has occurred sparsely in the unincorporated portion of the Elon College Planning Area; however, the trend at present is rather rapid urbanization. Growth has stretched along Williamson Avenue from the southwest corporate limits to the end of the one-mile fringe area. Another new subdivision has been constructed across Highway 70 due south of town but within the one-mile area. Most of the balance of the planning area is sparsely populated with old homes. Abundant vacant land suitable for urban purposes lies south, west, and north of town.

Due to the rapid rate of urbanization in the Elon College Planning Area care should be taken to insure appropriate subdivision of land with respect to lot layout, street system, utility services, and other factors necessary for good health, safety, and aesthetics. Already it is becoming apparent that subdivisions need city services particularly due to the need for water and sewer facilities south of town.

#### Housing Conditions

A survey by the Division of Community Planning conducted in September, 1967, revealed the condition of housing for the Town of Elon College and the planning area as expressed in Table XI and the Housing Conditions Map both of which follow. Figures from the 1960 Census are excluded herein because they are eight years out of date; techniques for evaluation employed by the Division of Community Planning are different and a great deal of





the substandard housing present in Elon College in 1960 has been removed. This survey was conducted by windshield survey and is a survey of external conditions only. Housing was classified as explained below:

1. Sound Housing is that which has no defects or only slight defects which normally are corrected during the course of regular maintenance. Examples of slight defects are: lack of paint, slight damage to porch or steps, and small cracks in walls visible from street.
2. Deteriorating Housing needs more repair than is provided in the course of regular maintenance. Such housing has one or more defects that must be corrected if the unit is to continue to provide safe and adequate shelter. Examples of defects are: holes, open cracks, loose or missing material over a small area of wall, foundation, floor or roof, or badly damaged steps or porch.
3. Dilapidated Housing does not provide safe and adequate shelter; in its present condition, it endangers the health, safety, or well being of the occupants. Such housing represents inadequate original construction of minor defects so critical or widespread that the structure should be extensively repaired, rebuilt, or torn down. Examples of defects are: holes, open cracks, loose or missing materials over a large area of the foundation, walls or roof, and extensive damage by storm, fire, or flood; sagging roof or foundation. Such structures, in order to meet minimum standards, would require drastic restoration that would be economically unfeasible, and therefore they should be demolished.



TABLE XI  
HOUSING CONDITIONS IN THE ELON COLLEGE PLANNING AREA

	Condition of Housing (Structures)					
	Sound		Deteriorating		Dilapidated	
	No.	%	No.	%	No.	%
Elon College (excluding college dormitories)	197	87	22	10.4	6	2.6
Fringe Zoning Area	349	82.3	38	9	37	8.7
Total Zoning Area	549	84.1	60	9.2	43	6.7

Source: Windshield Survey by Division of Community Planning, September, 1967.

The purpose for identifying areas with substandard housing is to determine the causes creating substandard housing, to prevent spread, and to apply corrective measures. Furthermore, some of these areas are blighted because of physical conditions such as poor drainage, steep slope, inadequate soil suitability, and other such factors that will not be permitted again if detected by a progressive planning program.

Since the removal of a large block of substandard housing by the college after the 1960 Census, the overall housing conditions in the Elon College Planning Area are good. Scattered throughout the area, however, are pockets of substandard housing. In addition a sizeable slum area exists southwest of town adjacent to the corporate limits. Several reasons combine to account for the condition of this neighborhood (1) low income Negro families, (2) mixed land uses, (3) lack of city services, (4) unpaved streets, (5) inadequate original construction, (6) poor street layout, and (7) isolation.

Although solutions to combatting substandard housing will be discussed more thoroughly in a later report, it is suggested that strict building, electrical, and plumbing codes along with a minimum housing ordinance, subdivision regulations, and the current zoning ordinance be enforced to the maximum. A code enforcement officer is needed to insure compliance.







# ELON COLLEGE NORTH CAROLINA



HOUSING CONDITIONS  
January, 1968

-  Deteriorating
-  Dilapidated

Source: Field Survey by Division of  
Community Planning



## Commercial Land Use

### Town:

Very little commercial land is in use in Elon College due to the proximity to major shopping facilities in Burlington and other cities. Total commercial land inside the corporate limits is but 2 acres or .5 percent of total developed land.

In addition to the commercial activities which cluster in the one block containing the central business district, three other areas contain commercial activities; all three of these are located on Haggard Avenue. Within the central business district is a small grocery store, a laundry, the town hall, a cafe, a vacant shop, a soda shop, a dry cleaning establishment, a barber shop, a furniture store, a miniature golf area, and a billiards parlor. This area depends primarily on the college for trade and has developed as a consequence of the college.

Due to the retail trade areas in and around Burlington and their availability to Elon College residents, there has been no strong demand for a larger commercial area. This trend is likely to continue within the Elon College corporate limits and as a consequence only a limited amount of commercial land will be needed.

### Fringe Area:

Within the extraterritorial planning area there are approximately 7 acres of land devoted to commercial activities; however, a large part of this is due to the location of a drive-in theatre near the northeast edge of the one-mile planning area. Commercial land uses account for approximately 1 percent of total developed land within the extraterritorial fringe area. A great deal of the commercial activities within the one-mile area occur as mixed land uses in residential areas. Such occurs five times just west of the Elon College corporate limits, and three times east of Elon College along Haggard Avenue. Elsewhere in the planning area commercial activities are clustered, for the most part, in convenience areas for nearby residents.





## Industrial Land Use

### Town:

Within the corporate limits there is no industrial land except for 1 acre that encompasses the sewage treatment plant. This 1 acre accounts for but .3 percent of the total developed land within the town. It has been pointed out in the Population and Economy Study that the town needs additional industry in order to supplement its tax base; however, most of the available vacant land within the town is adjacent to residential areas and not suitable for industrial purposes. Exceptions to this are in northeast Elon College, north of Haggard Avenue. It is suggested that industrial sites be located here and adjacent to the corporate limits elsewhere so that it can become a part of the town for mutual benefits.

### Fringe Area:

Industrial land use within the extraterritorial planning area encompasses 5 acres or 1 percent of total developed land. The only major industries are a folding box manufacturing plant located west of town and a belt factory south of town. Smaller industrial land uses are spotted south and east of town. No adverse effects of industry on other land uses are found in the area.

## Cultural and Recreational Land Use

### Town:

Due to the location of the college and the Home for Children, a rather large amount of land is devoted to cultural and recreational land use within the corporate limits. A total of 103 acres falls in this category which is 29 percent of developed land and 20 percent of all land within the corporate limits. Over 90 acres of this land is owned by the college and children's home. In addition to the land utilized by the college and the Home for Children, other land includes a cemetery, an elementary and a high school, and several churches.





Of primary significance is the location and site size of public schools which will be discussed in the Land Development Plan.

#### Fringe Area:

Within the fringe area, 159 acres of land are devoted to cultural and recreational land use. Most of this land is utilized by the Burlington Country Club. The balance is spotted throughout the area, the largest tract being a church camp just west of town.

Since all of the cultural and recreational land uses occur adjacent to vacant land or land developed for residential purposes, no adverse effects are created except for a riding stable located adjacent to Truitt Drive. Residents often complain because of the noise, riding in the streets, and other adverse effects.

#### Transportation Land Use

This land use, although not indicated separately on the Existing Land Use Map, encompasses one of the largest amounts of land in both the town and fringe area.

The transportation network, existing and proposed, forms a framework for the Land Development Plan. Different types of traffic such as residential, commercial, or industrial have special requirements which require different planning techniques for satisfactory traffic circulation. It is important that transportation facilities be designed and located so that once they are constructed they will serve efficiently the total land used.

There are two types of streets and roads within the planning area: (1) streets and roads that are a part of the North Carolina State Highway System and are constructed and maintained by the State, and (2) streets and roads maintained by the Town of Elon College.

#### Town:

Within Elon College there are 64 acres or 18 percent of the developed area devoted to transportation. Of this total an



estimated 13 acres is railroad right-of-way. Total street mileage for Powell Bill purposes is 5.86 miles and of this total 3.05 miles is town maintained and 2.81 miles is state maintained as of January 1, 1967. In addition, the town maintains .07 of a mile which does not qualify for Powell Bill funds because of a right-of-way of less than 16 feet. Of the total street mileage, slightly less than one mile is unpaved. On the Street Conditions Map which follows, unpaved streets are indicated for both the town and fringe area. It can be noted that the unpaved streets inside the corporate limits are located in heretofore undeveloped areas. There are no significant problems with the street system except that existing streets sometimes dead end without consideration for future development. Since dead-end streets occur on undeveloped land, extensions and connections can be made on the proposed thoroughfare plan without unusual difficulty.

#### Fringe Area:

Streets and highways within the fringe area include major arteries that provide access between Gibsonville, Elon College, and Burlington and U. S. highways and minor streets that provide access to developed properties. Major thoroughfares in the area include U. S. 70, N. C. 100, N. C. 87, and Front Street. Within the planning area 117 acres or 21 percent of developed land is devoted to transportation. Most of this is for highway transportation. There are no significant problems in the transportation network but development must be planned wisely in order to avoid future problems.

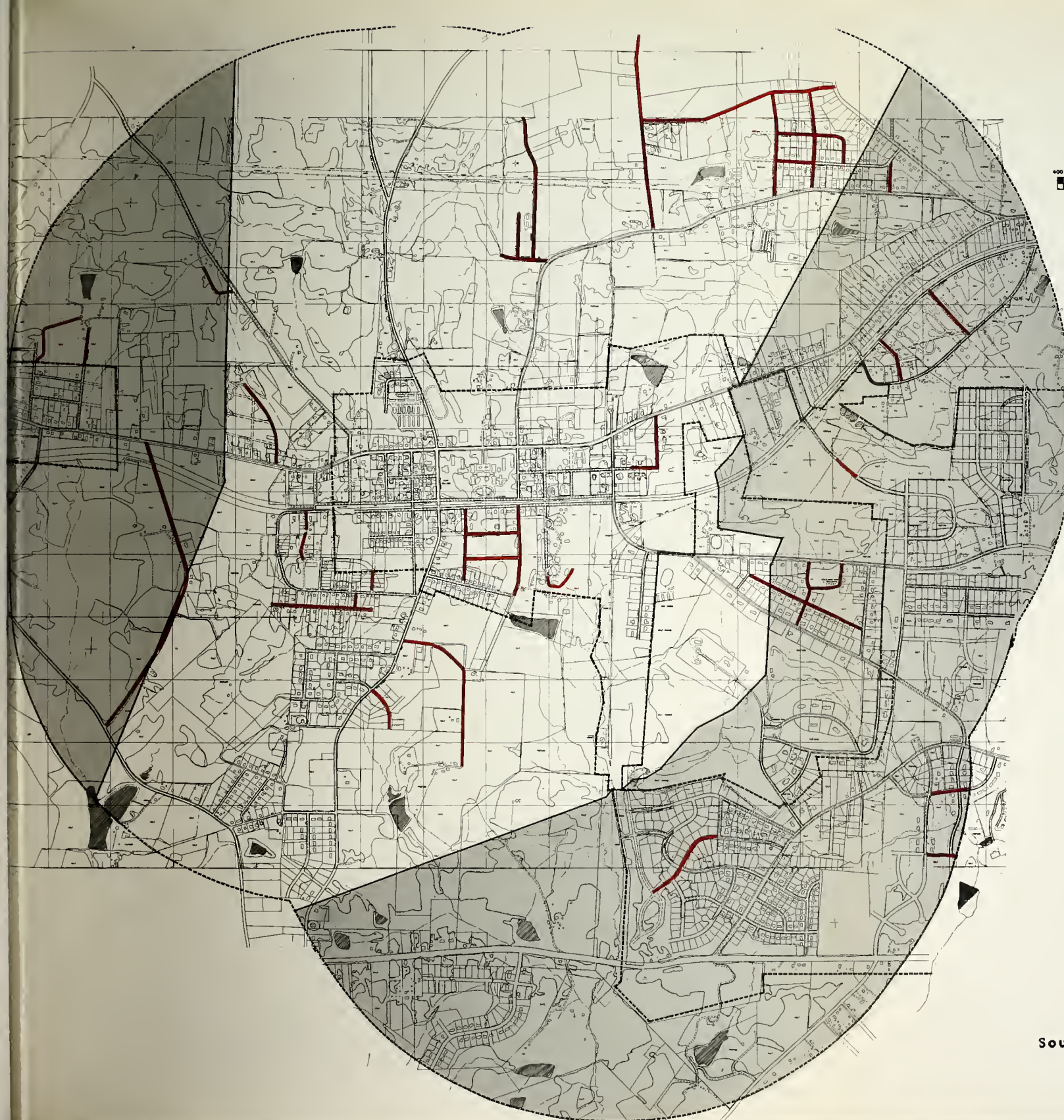
#### Average Daily Traffic Volume

The average daily traffic volume on major streets and highways is a vital factor in planning improvements in a circulation system. Traffic volume counts are made at frequent intervals by the North Carolina State Highway Commission in order to determine the vehicular traffic entering, leaving, or passing through certain points in an area. The Average Daily Traffic Volume Map





# ELON COLLEGE NORTH CAROLINA



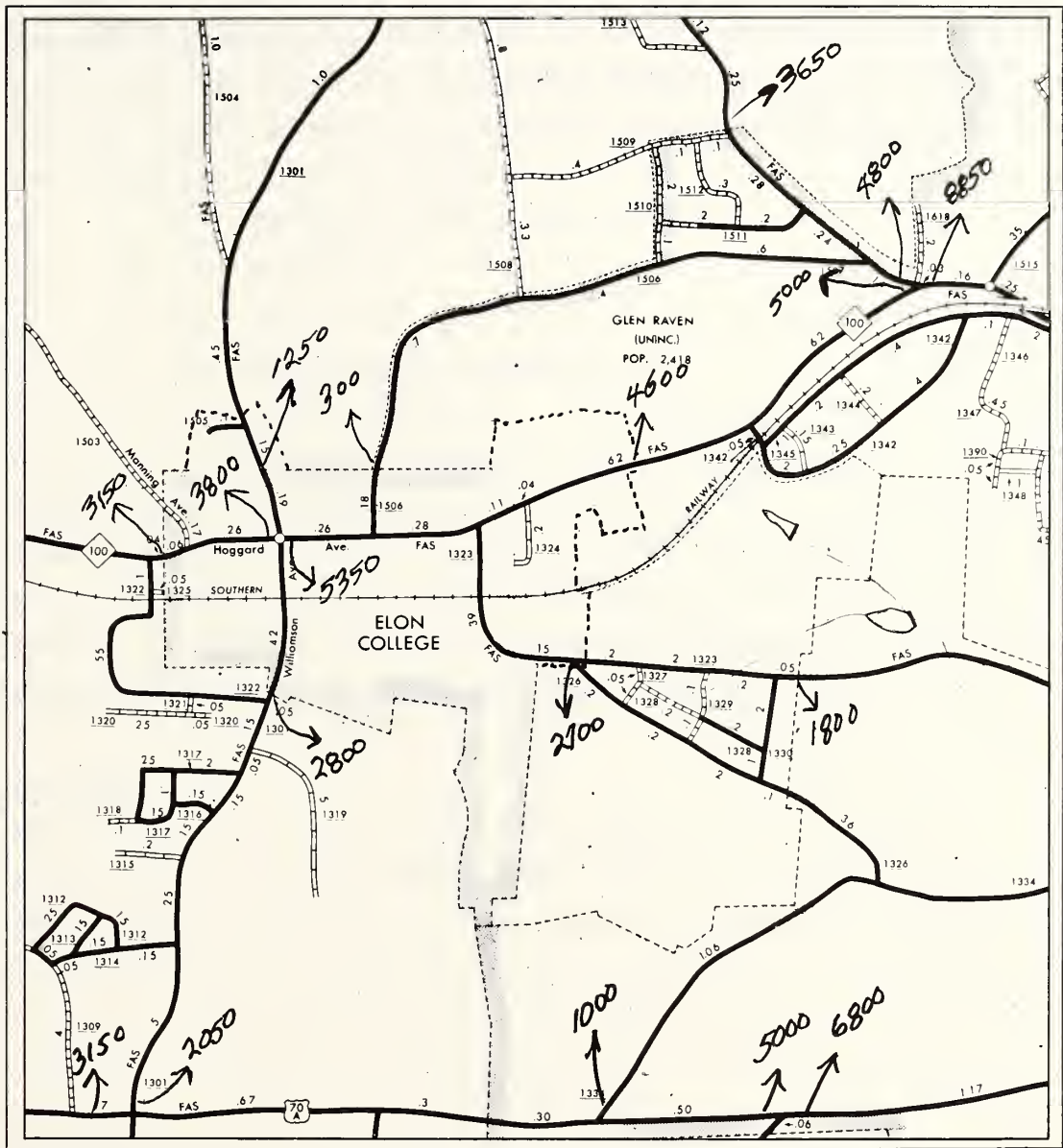
STREET CONDITIONS

— Unpaved Streets

Source: Field Survey by Division of  
Community Planning.



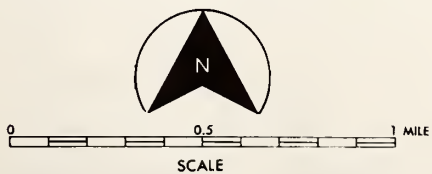




# ELON COLLEGE

NORTH CAROLINA

1966 ANNUAL AVERAGE DAILY  
24 HOUR TRAFFIC COUNT



Source: North Carolina State Highway Commission



which follows is the most recent traffic count made in the Elon College area. It should be noted that only state maintained streets and highways are included in this count; however, field surveys by the Division of Community Planning reveal that these are the most often traveled streets. Streets and highways with heaviest traffic volume include:

Haggard Avenue (N. C. 100)

U. S. 70

N. C. 87

Williamson Avenue

Front Street

Edgewood Avenue

Except for the traffic on N. C. 87 and U. S. 70, it is estimated that most of the traffic in the Elon College area is purely local. This is due primarily to the nature of the highway system - a system that for the most part serves as a connector between Gibsonville, Elon College, and Burlington.

#### Vacant Land

Vacant land is of primary significance in preparing a land development plan because with this land planning mistakes of the past can be avoided and as a consequence total development can follow a plan rather than occur as a consequence of haphazard development. Furthermore, the abundance of vacant land can often make it possible to develop a plan that fits into the framework of existing land uses whether or not these uses were developed for the good of the entire area. For example, industry might exist in areas most suitable for recreation but as a consequence of vacant land recreation can be placed elsewhere where it will conform to the existing or planned land use. On the other hand, with little or no vacant land this choice is not available. Because of this choice, vacant land is perhaps the most significant reason for devising a land development plan. Planning in general is more apt to affect future development in vacant areas than to alter or replace existing development. For this reason, the Elon College Planning Area is fortunate to have an abundance of vacant land.





#### Town:

Vacant land within the town encompasses 157 acres or approximately 31 percent of the town's total land. Most vacant land is spotted throughout the town but several relatively large tracts are vacant and suitable for development. The largest tracts of vacant land exist in three sections in the southern corporate limits: (1) south of and west of Truitt Drive, (2) south of Summerbell Avenue, and (3) near the southwest corner of town south of the railroad. A fourth section exists in northeast Elon College north of Haggard Avenue.

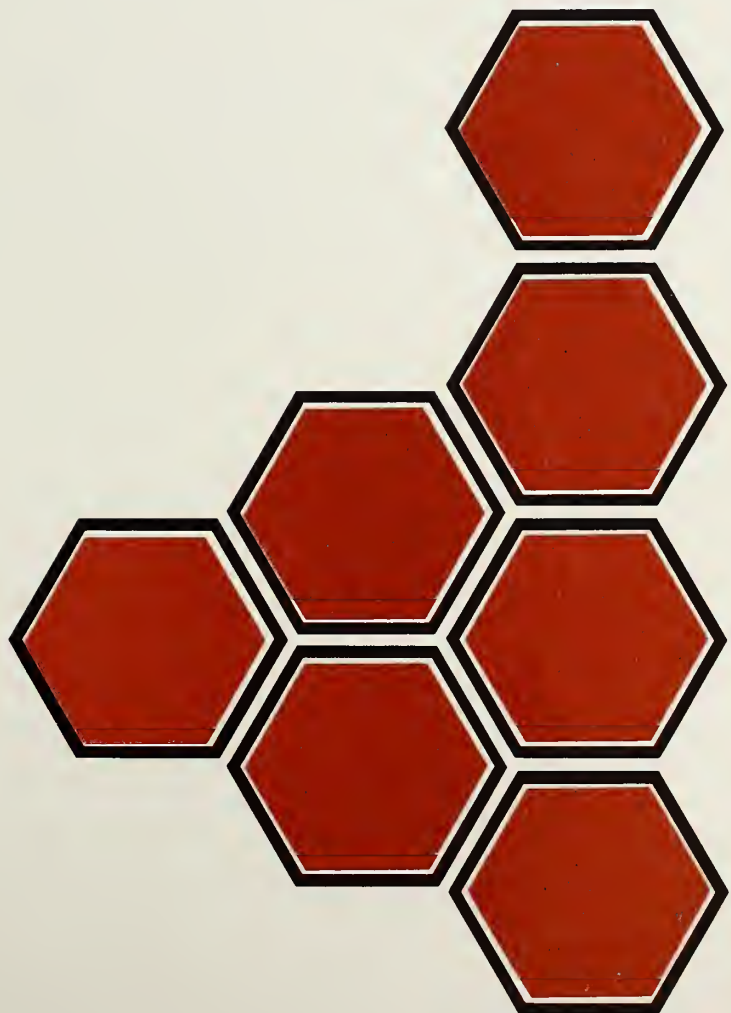
There are several reasons for the amount of vacant land within the incorporated area. The large tract of vacant land in the northeast section of town is an area that has been recently annexed by the town. This tract will undoubtedly begin to develop as a consequence of available municipal services. The large tract of vacant land in southeast Elon College which is just south and west of Truitt Drive and north of the sewage treatment plant is also a relatively new addition to the corporate limits. This area is currently beginning to develop with residential construction. Other vacant areas in town have remained vacant in part because they are owned by the college and not available for development or because of limited town services. Since the college has recently changed its policy and is giving up ownership of some of this property, some of this vacant land will begin to develop.

#### Fringe Area:

Within the planning area there are 1,730 acres of vacant land or 76 percent of the total land area. The availability of this land is rapidly decreasing because of the intensive recent residential development south of town. It is expected that this trend will continue; consequently, it is important for the planning program to guide such development preventing strip development, haphazard street design, congestion, and other problems apparent with misguided rapid urbanization. Already it is evident that a filling-in process is needed in back of major roads which are striped with development.



# Utility System







## UTILITY SYSTEM

### Introduction

Because of physical limitations of the land, municipal services are sometimes prerequisites for urban development. Although this is not altogether true in the Elon College Planning Area, it is certainly a limiting factor for urban growth. Parts of the planning area cannot properly grow unless urban services are provided and most specifically water and sewer service. Recent urban growth south of Elon College has reached a level of residential development whereby safe well water is in danger of contamination as a result of numerous septic tanks. Unless this and other parts of the fringe area are served by municipal water and sewerage, urban growth will be a problem rather than an asset.

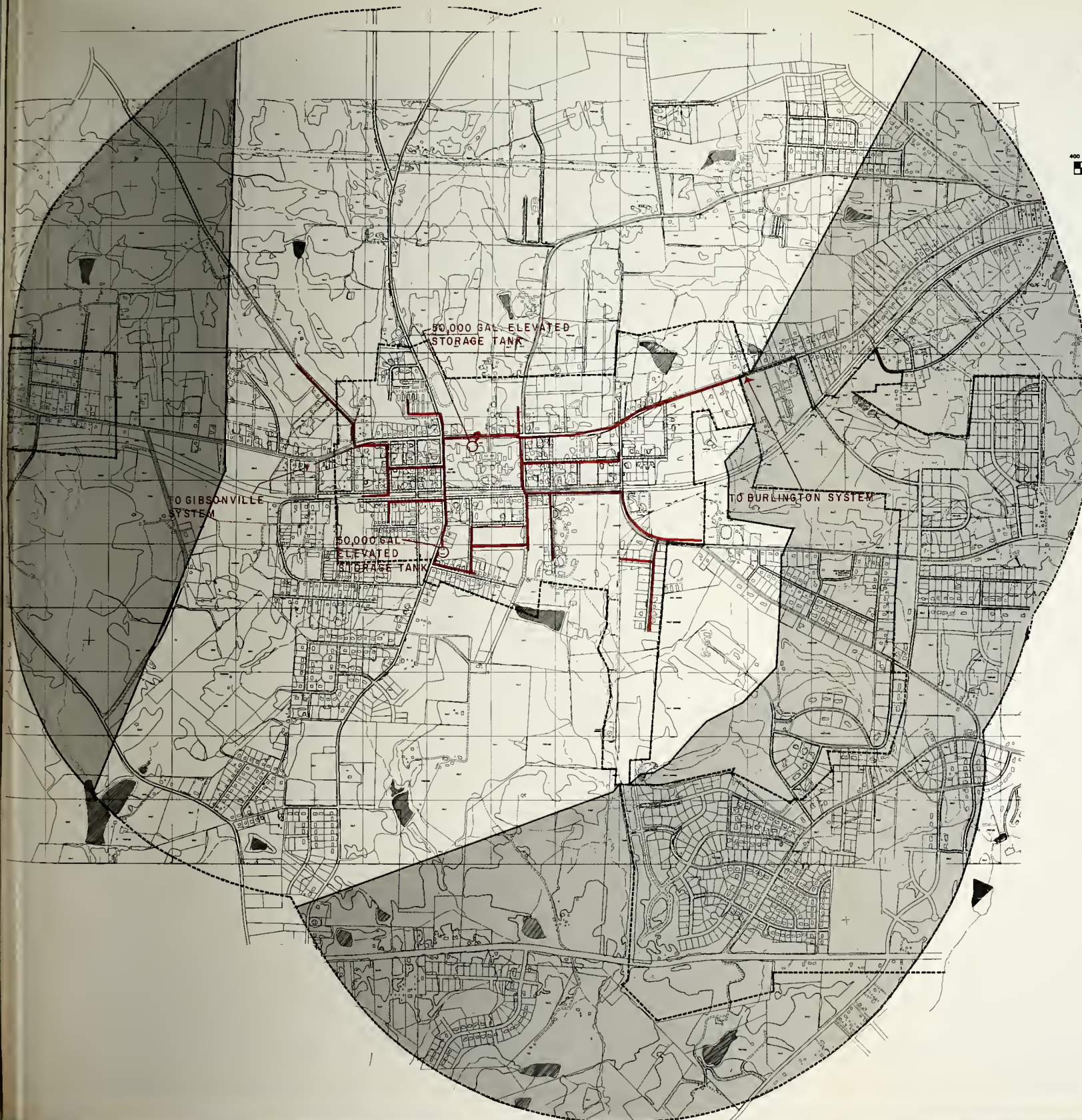
Since water is distributed by pressure, most any area can be served; however, the problems of extending a sewer system are not so simple since sewage flows through a gravity system. The hilly topography within the Elon College Planning Area will require pumping stations for sewage uplift to treatment facilities.

### Water System

Within the Elon College Planning Area there are three municipal water systems: Elon College, Burlington, and Gibsonville. Recently, the Elon College system connected a 2 inch line to Gibsonville and plans are approved to connect the Elon College system to Burlington so that a connected municipal water system will stretch from east of Graham to west of Gibsonville or a distance of over 10 miles. The water system will be discussed in more detail in a later report. For use in preparing the land development plan, a map of the water system in the planning area is included in this report.



# ELON COLLEGE NORTH CAROLINA



WATER SYSTEM

— 6" Lines

— 2" Lines





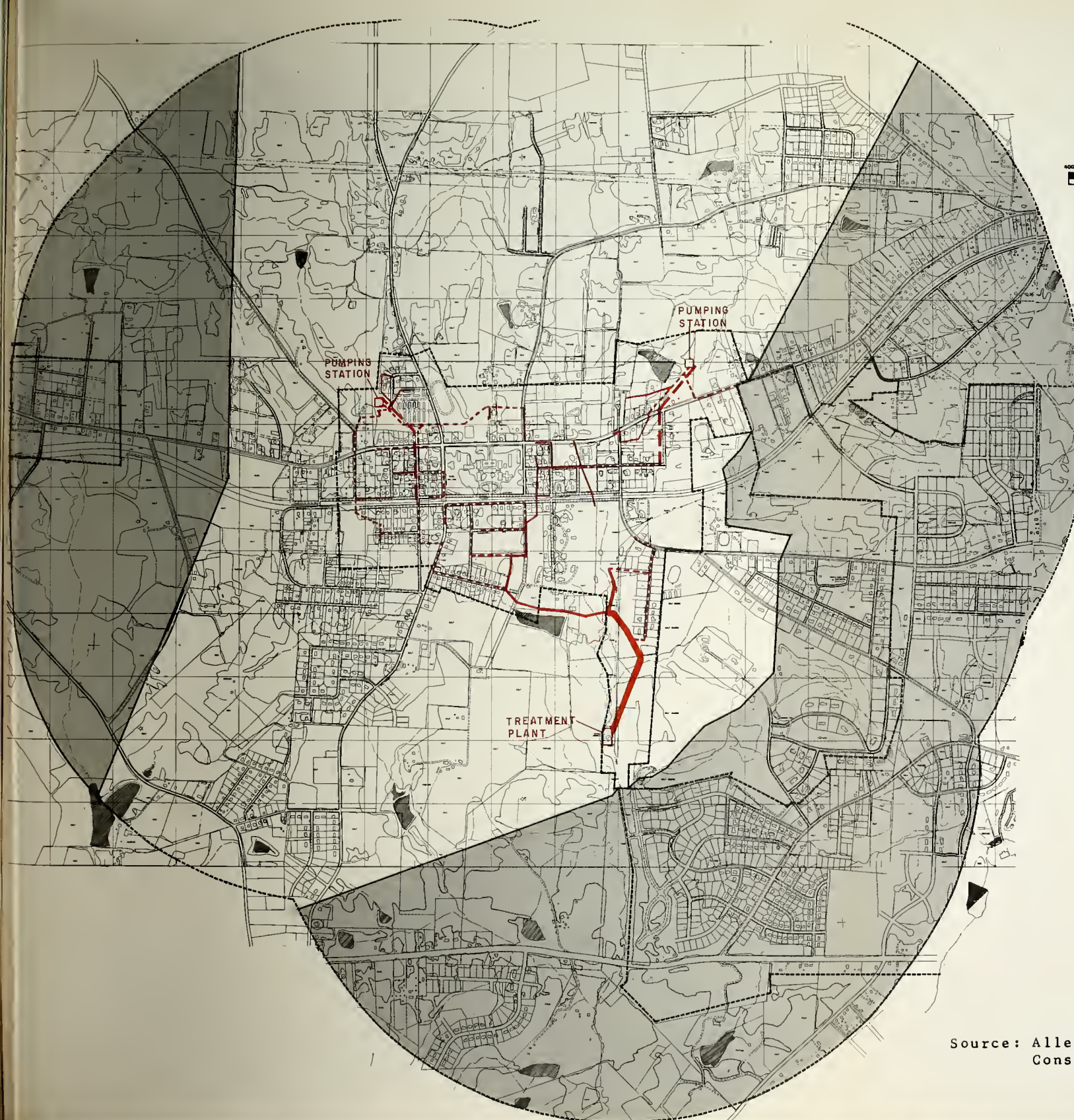
### Sewer System

As can be noted from the Sewer System Map, most all of the incorporated area of Elon College is served by the town sewer system which has a treatment plant located south of Truitt Drive near the southeast corporate limits. Due to the rolling topography, pump stations are utilized in northwest and northeast Elon College. Additional pump stations will be needed if the town expands its sewer service in any direction from the corporate limits.





# ELON COLLEGE NORTH CAROLINA



## SANITARY SEWER SYSTEM

- 6" Lines
- - - 8" Lines
- 10" Lines
- 12" Lines
- 15" Lines
- - - Forced Mains

Source: Alley, Williams, Carmen, & King, Inc.  
Consulting Engineers



## SUMMARY

The preceding sections of this report have analyzed the physical character of the land and the relationship of present land uses to the physical character of the area. For the most part only existing problems regarding present land uses have been discussed. Solutions for problems have been reserved for the Land Development Plan. The contents of this report will be used as a guide for future land development.

Not only is this Survey and Analysis important for future land development but of equal importance are policy guidelines that will assist local developers and decisionmakers. The Planning Board recommends that the following standards be adopted for guidelines in developing Elon College:

1. All future land development proposals should be brought to the attention of the Planning Board for review, advice, and assistance. This will insure recognition and consideration of the Land Development Plan.
2. All future industrial or commercial development proposals should be brought to the attention of college officials if such development is adjacent to college property or will in any way affect the college environment.
3. Land uses of a traffic generating nature should be encouraged to locate adjacent to major thoroughfares and/or rail facilities. Such facilities should not encourage traffic around the central core of town or the college.
4. Commercial strip development should be discouraged in both the incorporated area and one-mile fringe. Commercial development should be clustered in one block in the town area and at various nodes throughout the planning area.







5. Planning tools such as the existing land use information should be reviewed and updated for periodic plan revisions.
6. The town should adopt a zoning ordinance and subdivision regulations that have jurisdiction over the fringe planning area.





